Chairman Wm. A. Free, Sr., of the Consumer and Trade Relations Committee of the National Canners Association, reporting at the Convention meeting of the N.C.A. Board of Directors on the accomplishments of the program. On the platform at the left is President E. E. Willkie and at right Executive Secretary Carlos Campbell. The report was made before a back drop of displays of the various features of the 1954 campaign.

48th ANNUAL CONVENTION

NATIONAL CANNERS ASSOCIATION

Chicago Illinois, February 19-23, 1955

GENERAL SESSION

Saturday, February 19

PRESIDING: E. E. Willkie, President National Canners Association

GREETINGS TO THE CONVENTION DELEGATES

by

E. E. WILLKIE

Welcome to the 48th Annual Convention. I want to take this opportunity to thank the membership for having let me serve them as their President during this past year. It has been a very stimulating and pleasant experience.

We have a very fine Convention; optimism fills the air. They tell me that for the first time in a generation the economists have all agreed that business is good; business is going to stay good. The statisticians tell us that there is an ever- expanding population and in the next 25 years we are going to have to produce 40 per cent more food than we are producing today. Truly the country and the canning industry have a very bright future. I am optimistic. With the statisticians and with the economists I believe that we have a very bright and glorious future. But when you and I go back home to get to our individual problems, our own specific problems, let us remember that in this industry producing 99 per cent of demand means life, liberty and the pursuit of happiness; 110 per cent of demand means failure and fear and futulity. Let us remember that the successful operator is the operator who maintains that delicate balance between supply and demand; the man who packs what he can sell and sells what he packs at a profit. Let's not leave any casualties behind; let's all go forward together. I thank you.

OFFICERS AND DIRECTORS

Mr. Fred C. Heinz, Chairman of the Nominating Committee and 1952 President of the Association, presented the following slate of officers and directors which was unanimously approved: President, George B. Morrill, Jr., Burnham and Morrill Company, Portland, Maine; Vice-President, William U. Hudson, First Vice-President, Gerber Products Company, Oakland, California; Executive Secretary-Treasurer, Carlos Campbell, Washington, D. C.

Mr. Morrill is a third generation member of the family that helped to found the Burnham & Morrill Company over a hundred years ago. The 41 year old executive, a Yale man, spent two years with the American Can Company Research Department at Maywood, Illinois, and then joined the family business. He has been a Director of the firm since 1937.

Mr. Hudson entered the canning business in 1922. He assumed his present duties with Gerber in 1943. He has served on the NCA Administrative Council, on the Raw Products Committee and the Western Laboratory Committee.

New NCA Directors are: Frederick Bird, Medomak Canning Co., Rockland, Maine; Charles S. Bridges, Libby, Mc-

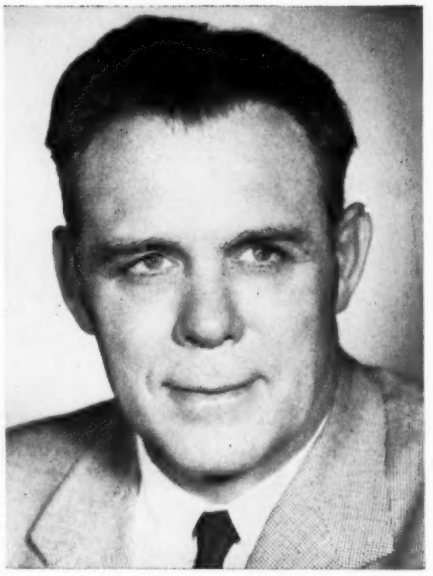
Neill & Libby, Chicago, Ill.; M. E. Brooding, California Packing Corp., San Francisco, California; Carlton Clifton, Carlton Clifton & Sons, Milford, Delaware; Robert C. Cosgrove, Green Giant Company, LeSueur, Minnesota; George Davidson, Foster Canning, Inc., Napoleon, Ohio; Ralph Day, Marshall Canning Co., Hampton, Iowa; Samuel E. W. Friel, S. E. W. Friel, Queenstown, Maryland; Henry McK. Haserot, Hawaiian Canneries Co., Ltd., Kapaa, Kauai, T. H.; Richard R. Hipke, A. T. Hipke & Sons, Inc., New Holstein, Wisconsin; Wesley Jense, Pleasant Grove Canning Co., Pleasant Grove, Utah; Max Lehmann, Northwest Packing Co., Portland, Oregon; T. N. Lyons, Morgan Packing Co., Inc., Austin, Indiana; D. E. Martinelli, Lake County Cannery, Inc., Upper Lake, California; Walter W. Maule, Mushroom Cooperative Canning Co., Kennett Square, Pennsylvania; Arthur Mendonca, F. E. Booth Co., Inc., San Francisco, California; B. E. Richmond, Richmond-Chase Co., San Jose, California; Daniel Rosenbaum, Sugar Rose Canning Co., Tampa, Florida; C. L. Rumberger, H. J. Heinz Company, Pittsburgh, Pennsylvania; Ryland Thomas, Thomas & Drake Canning Co., Haskell, Oklahoma; Elmer Williams, DeJean Packing Co., Braithwaite, Louisiana; Walter W. Wilson, Silver Creek Preserving Corp., Silver Creek, New York; Irving Goldfeder, Hunt Foods, Inc., Fullerton, California; W. Allen Markham, Markham Bros. & Co., Okeechobee, Florida.

THE CANNER IN A CONSUMPTION ECONOMY

Summary of an address By
RALPH D. PAINE, JR.
Publisher of "Fortune" magazine

Mr. Paine reminded his large and attentive audience of the outstanding selling job the food industry had turned in since the war . . . increasing the percentage of consumer income spent for food from 24 to 27 per cent, an increase roughly equaling 7 billion dollars . . . "The equivalent of a pretty good size industry in itself." He defined "selling" as "Everything that contributes to the saleability of a product from the time it is conceived until it is finally used up or worn out."

Exploring the possibility of the food industry holding this enormous share of consumer income now that other industries like automobile and clothing are making a determined drive to get it back, the publishing executive (1) noted the continuing rising in population—over 200 million by 1975. (2) called attention to the fact that when the 37 million post-war babies reach teen-age (3800 calories a day compared with 200 calorier for the six year old) they'll eat more and better food than they do now to the



E. E. WILLKIE, Retiring President
National Canners Association
Pacific American Fisheries
Bellingham, Wash.

tune of about 2 billion dollars. (3) emphasized that productivity is rising faster than population and (4) said that the U. S. has arrived at a true consumption economy. In other words, we're over the hump from the standpoint of capitalization, so that the only problem is to keep consumers consuming. He warned however, that if we don't do just that, and should there occur "a sudden national feeling that it is smart to be thrifty—for one year—it would bring on a catastrophe that would shake the world." He cited the savings sprees of 1951, when consumer sales of home appliances dropped off sharply, as an example of how even moderate shifts in consumer attitudes can effect our economy.

RALPH PAINE, JR

Mr. Paine said that, "any industry which can shift its share of the entire consumer market three percentage points —up—is some industry." He pointed out that food is now taking such an extraordinary share of the consumer dollar that in a very real sense everyone else in the consumer field has to sell against food.

The larger question, he said, "is how successful will our efforts be concerning what America produces. The limiting factor in this new consumption economy is not production, but sales. There is hardly an industry in the country in which the production men are not itching to open the throttle. If they did, of course, we would all soon drown in a sea of surplus goods.

"The primary job in business today is to keep the consumer buying. To keep him buying steadily and to persuade him steadily to buy more.

"If the apparatus of American selling can keep people buying, keep them buying steadily and steadily buying more it will have worked a greater wonder in the world than American production. Sell more canned foods, sell better canned foods, but above all, sell. That way it can be truly said of you that what is good for the canning industry is good for the U. S. A."

THE EISENHOWER ECONOMY

Summary of an Address By
THE HONORABLE
GEORGE M. HUMPHREY
Secretary of the Treasury

Mr. Humphrey explained in question and answer form, the economic principles which the Eisenhower Administration is trying to perpetuate and strengthen.

Q.—(1) Has the Administration abandoned its program of trying to balance the budget?

Absolutely not. Record shows that progress has been good even though we have not reached the goal. Deficit in fiscal 1953 was 9.5 billion dollars. In 1954, 3.1 billion. Fiscal 1955 looks like 4.5 billion, but the new budget for fiscal 1956 cuts the deficit to 2.4 billion dollars, maybe less if revenue holds up.

Q.—(2) Why haven't we cut Government spending faster?

We cannot switch from years of deficit spending to a balanced budget in too short a time because production of Government spending puts people out of work. If done too fast, they cannot be absorbed by industry. Too, in these perilous times our first obligation to the Nation is to provide adequately for our security.

Q.—(3) Why has this administration cut so much from the defense budget?

Sixty-five per cent, or 40.5 billion dollars a year goes for National security. Of the remaining 21.9 billion dollars, 14.8 billion dollars or 24 per cent of the total

budget goes for interest on the debt and other fixed charges. That leaves only 7.1 billion or 11 per cent of the total budget for other so called civilian agencies of government. Now it simply follows that if any large cuts in spending are to be made, they must largely come —but carefully and wisely made—from the heavy total of defense. We are spending an estimated 34 billion dollars, almost three times what we were spending when Korea broke out for an Army twice the size, even after the proposed cuts are made.

Q.—(4) Have we cut too much from our security?

No. The reductions that we have made in spending for defense have not reduced our armed strength. What we are doing is shifting some of the emphasis from man to machine.

Q.—(5) Can't we cut spending and balance the budget by just eliminating all foreign aid?

That program is neither simple nor wise. Certainly it is better to put military equipment in the hands of our friends overseas so that they can help to defend themselves if the need comes rather than also send American boys to handle those weapons with all the potential loss in lives and national wealth, as well as the human anxiety that is involved.

Q.—(6) In view of the big reductions in expenditures that have been made could the budget have been balanced?

Yes, if we had not accompanied the heavy cuts we made in spending with substantial tax cuts, we would have balanced the budget. The tax cuts were made to help cushion the shock of reduced government expenses.

Q.—(7) Will there be further tax cuts?

Not this year if the administration has its way. Later yes.

Q.—(8) If you are going to cut taxes for the next year, how can you ever balance the budget?

We can and will do both. We will keep trying to cut government spending further. As the country continues to grow and a broader tax base is provided there is no reason why we can't have both a balanced budget and lower tax rates, provided only that world conditions continue to improve.

Q.—(9) Why do you have to raise the debt limit if you are really cutting spending as you claim?

We had no leeway under the debt limit as we entered our first full fiscal year 1954. There was little we could do beyond carrying out the spending that had already been planned and paying the bills that were presented. These previous commitments plus the wide seasonal variations in collection of corporate

HON. GEORGE M. HUMPHREY

income taxes made some elasticity in the debt limit absolutely essential.

Q.—(10) Is borrowing outside the debt limit necessarily improper?

No, not necessarily. Out of the general budget yes, but if the government is acquiring or operating earning assets, it is perfectly proper that they should be independently financed. A toll road is a good example.

Q.—(11) Is the government improving its debt structure?

Yes, the enormous debt is too heavy for short time maturities. We are making progress slowly in lengthening the average maturities but we must move slowly so as to not upset our sensitive economy.

Q.—(12) Will there be more long term issues?

Yes.

Q.—(13) Have we permanently stopped inflation?

Our record of the past two years has been good. Value of the dollar has changed less than 1/5 of one cent between January 1953 and today. This compares with a loss of 48 cents in the value of the dollar from 1939 to the time when this administration took office.

Q.—(14) Isn't a little inflation a good thing?

No! It is not and such thinking is very dangerous. Millions of Americans are earning more dollars today than they did twenty years ago. In many cases there is a real improvement in that they have better homes, automobiles, etc. On the other hand, through dollar devaluation, large numbers of persons on fixed incomes and persons who have put aside savings for retirement at old age have been cruelly hurt.

Q.—(15) What is the prospect for more jobs in this country?

Confidence in government is increasing. As it does, people not only save money but will invest their savings providing the funds for new plants, new equipment, new and better ways of making more things. Hence, more jobs.

Q.—(16) What is the economic outlook today?

The economic downturn of last year is behind us. In general the economy is now moving upward on a broad front though there are some lines and areas still depressed. Unemployment in January was 3.3 million, an increase of 500,000 over the previous month and 200,000 over January a year ago. But, employment in January was 60.2 million, or 400,000 higher than last January.

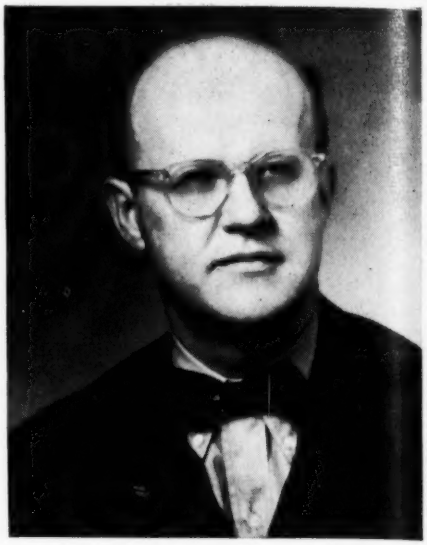
NCA Consumer and Trade Relations Committee at work at the Convention. Continuance of the program was unanimously and enthusiastically approved by the Board of Directors as a regular part of the budget.

REPORT OF RESOLUTIONS COMMITTEE

By H. J. BARNES
Chairman

By unanimous approval, the membership (1) acknowledged a community of interest between grower and canner pledging its full energies and support to a better development of that understanding. (2) Expressed opposition to interstate barriers by particularized state requirements—any regulation that specifies particularized labeling requirements or prohibits ingredients authorized by federal law or standardizes products to reflect local preferences, creates unwarranted interstate barriers and defeats the interest of consumers, canners and growers alike. (3) Commended the many agencies involved in the promotional work of the past year and expressed the Association's indebtedness to them. (4) expressed the Association's gratitude to Edward E. Willkie for the privilege of having had his qualities of leadership and of sharing so richly in his genial wisdom. (5) mourned the passing of Frank Armstrong, Sr., William E. Briathwaite, G. H. Clark, William Clapper, Berkeley A. Davis, Dr. J. Russell Esty, Jay E. Fitzgerald, Strickland Gillilan, W. F. Gohlke, J. Howard Hamilton, Dana M. Hubbard, Edward H. Jacob, Sr., Wilbur P. Kappler, Harvey H. Leininger, W. L. Rowlands, Norris H. Sanborn, Elton S. Shaw, Frank M. Shook, William J. Underwood.

The Association also expressed appreciation to the staff and to the guest speakers and allied trades for their contributions to the 1955 Convention.



GEORGE B. MORRILL, JR., President
National Canners Association
Burnham & Morrill Company
Portland, Maine

MARKETING SESSION

Saturday, February 19

PRESIDING: Wm. A Free, Sr., Chairman, Consumer & Trade Relations Committee

Canned Foods Merchandising

NEW MERCHANDISING OPPORTUNITIES IN LOW HANDLING COSTS OF CANNED FOODS

Summary of Paper by
DON WHITE
Don White, Inc.

Mr. White made the first report of findings of NCA's cost of handling study, just completed. It consisted of personal interviews with owners and/or executives of 247 independents, voluntary and cooperative groups and corporate chains operating 34,113 stores and supermarkets. Only about 5 per cent of these keep separate records of sales and expenses of the canned foods department. This means that few real facts are available compared with figures available for the meat, produce, dairy and bakery departments.

Of the 5 per cent that do keep records, 34 per cent rank non-foods as having the lowest retail handling cost, twenty-four per cent rank bakery products first, but these two commodities are handled partly or wholly by the manufacturer or rack jobber. Next came canned foods, 22 per cent, frozen foods 6 per cent, dairy products and groceries non-canned 5 per cent, produce 3 per cent, meat 1 per cent.

MOST IMPORTANT FACTOR

Asked, "Which one single factor would you say is the most important in determining your company policy with respect to giving extra sales and merchandising emphasis to a particular type of product or to a particular department?", retailers replied: (1) Fast turnover, 39 percent. (2) high gross profit margin, 18 percent. (3) big gross dollar volume, 15 percent. (4) dramatic promotion values, 11 percent. (5) big share of net profit dollars, 8 percent. (6) low handling cost, 6 percent. (7) miscellaneous, 3 percent.

To the man who believes that any business should be operated to make even a small net profit, the ranking of these responses might make grocery retailers look like philanthropists or like the fellow who lost money on every sale but was happy because he made so many sales.

Canned foods nevertheless were regarded favorably when scored against the above criterion. 49 percent of all retailers credit canned foods with from 20 to 40 percent of their total sales—an average of 31 percent and 57 percent of them feel that canned foods share of total sales during the next 5 years will be as good or better than at present. There's a wide range of opinion regarding turnover. Opinion ranges up to 52 turns per year with an average of 15.3 turns per year. On gross profit margin, canned foods are reported to yield an aveage of 15.2 percent or approximately 10 percent higher than the 13.7 percent reported for groceries non-canned.

In view of this favorable opinion, it is startling to see that a majority 56 percent) also state that the amount of space in their stores is being kept the same for canned foods and that canned foods head the list of items for which retailers currently are decreasing space. Percent of retailers alloting the same space: canned 56.3; frozen 27.1; non-foods 52.6. Percent increasing: canned 19.8; frozen 46.9; non-foods 22.3. Percent decreasing: canned 6.5; frozen 1.0; non-foods 2.0.

Canners have an exciting merchandising opportunity to supply retailers with more factual information about retail sales, handling costs and earning potentials that can result from increased merchandising emphasis on canned food.

AN EFFECTIVE MARKETING PROGRAM FOR THE SMALL CANNER

Summary of Remarks by
J. SIDNEY JOHNSON
National Biscuit Co.

The current question to be answered by the smaller canners of the nation is not **can** they merchandise effectively but **will** they, it was agreed by the panel of experts which discussed the subject at the Marketing Session on Saturday afternoon, February 19.

First on the panel of experts that proved conclusively that the smaller canner can merchandise, Mr. Johnson outlined the competitive advantages of the smaller canner and laid down seven principles for setting up an effective marketing program.

Greatest asset of the small canner, said Mr. Johnson, is his flexibility. He is not bound by rigid arbitrary policies and is usually willing to recognize local marketing conditions. "Large bodies move slowly. The alert small canner can outmaneuver his big competitor if he's on the ball."

Secondly, the small canner can be more selective in his customers. He can select the distributor or distributors in each market who can give the best representation and maximum sales. The big fellow cannot do that. He must do mass selling in order to match his mass production output.

Thirdly and most important, the smaller canner can develop unusual and distinctive products that the large canner cannot easily match with his mass production facilities.

SEVEN PRINCIPALS FOR SETTING UP PROGRAM

(1) Make sure you have proper financing. Unloading stocks in order to cover financial obligations must at all times be avoided. The money is available.

(2) Set up a standard of quality that big competitors will have difficulty matching. It's being done all the time.

(3) Limit your sales to a territory which can be economically covered. Don't try to cover the waterfront.

(4) Select your broker with particular care.

(5) Be equally selective of your customers.

(6) Take pride in being small, growing, and flexible. Don't ape the methods of your large competitor. Set your own standards and work hard to live up to them.

(7) If you're not yourself a good sales and merchandising man, hire a smart youngster just out of college to build an aggressive merchandising program for your business under a rigid budget.

ORGANIZING BROKERS INTO AN EFFECTIVE SALES FORCE

Summary of Remarks by
E. NORTON REUSSWIG
Lestrade Bros.

By all means first pick the right type of food broker. A study of the various broker organizations in a given market would probably indicate that some concerns are better geared to your small operations than others. They know the pulse of the market and the particular customer outlets best suited to your offerings.

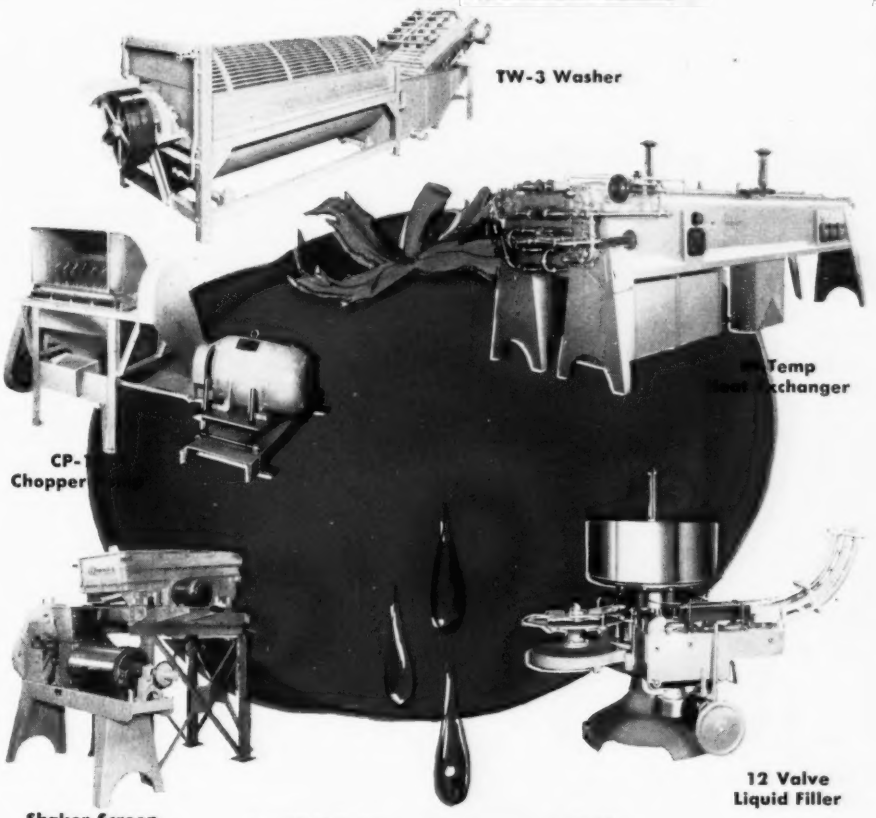
Secondly, select the right territories. Weigh such factors as transportation costs, competitive brand and product situations, quick delivery services.

Thirdly, select the right customer—those who appreciate that your success is their success, that your problems are of combined mutual interest, impress on

For Quality and Economy

COMPLETE TOMATO JUICE LINE

by CRCO* "SAY "SEE-AR-CO"



FROM RAW PRODUCT...
...TO FILLED CONTAINER
you get fast, sanitary and economical processing every step of the way.

Every piece of equipment in CRCO's Complete Tomato Juice Line is engineered to process better, cleaner and faster. They add up to more profit for you. Write for complete data.

THE BEST OF Everything

CHISHOLM-RYDER CO. INC.
Niagara Falls, New York
FOR THE FOOD PROCESSOR

them that this is a long range sales program, not just for the moment or the season. Avoid bargain hunters.

Fourth, the smaller canner should have no mistaken notion that the two words "promotion and merchandising" belong only to the giants of the canning industry. Allocate, on a per case basis, a nominal sum of money for promotional work. Invite your broker to sit in on ways and means of wisely expending these allocated funds.

Fifth, keep in constant contact with your food brokers. Spend time with them covering the important customers and be ready and willing to adapt sales policies to the flexible trend of the times.

Mr. Reusswig compared the small canner's sales problem with the movies. He called a sales plan a "sellescope" with the three demensions of depth, color and wide vision. The depth is the carryon" through the food broker to the customer and the consumer. The color is the product appeal in top quality, attractively labeled and cased and displayed. Wide vision is the chain of mutual understanding and confidence that develops throughout the years to build up a cotinuous performance of satisfaction, salesmanship and security.

RELATIONSHIPS WITH BUYERS

Summary of Remarks by
Wilda A. Coleman
Mick-or-Mack Stores

Before the canner can hope to establish an effective relationship with buyers he must recognize the buyers problems. He must become acquainted with the buyers company, his facility, his handicaps, his problems. He must spend time in the store, acquaint himself with his customer's methods of operation and merchandising policies.

The product must be pre-sold to Mrs. Consumer before she walks into the store. It should have something better than average to offer in the way of superior quality or lower price and the label is very important. "We have turned down many new items with no more than passing interest in the contents of the can," she declared, "because the label was unattractive." Buyers want to know that your label is in the market to stay, Miss Coleman told the canners. They cannot afford to stock new items, see a demand built for them and then be unable to buy them another year. Another precept is to offer your merchandise all year round—warehousing space will not permit a buyer to buy a years supply at one time. And sell the buyer what he wants and needs, not what you want to sell him. In everything you do, build confidence in your firm and its integrity.

CAN THE SMALLER CANNER COMPETE FOR RETAIL MERCHANDISING VISIBILITY?

Panel Presentation By
LYMAN L. WELD
Feature Merchandising Inc., Chicago

"The real question here is whether the big canners have quality of product, or influence, or selling "know-how," or finances which enable them to get more shelf or store visibility for their products than a smaller canner can hope to match—and therefore more opportunity for sales, inasmuch as today 50 percent to 60 percent of retail sales of canned fruits and vegetables are impulse purchases.

"Like all questions of this kind, this also needs definition. I think we may presume that no smaller canner would attempt to compete with big canners in all major markets at once. So the real question is whether the smaller canner can compete successfully in any given market such as Buffalo, Denver, or Detroit; or in any limited number of regional markets.

"Granted this limitation, the question might better be: "How can a big canner, attempting to cover the whole United States, compete with smaller canners who can concentrate on a limited number of markets and take advantage of every weakness in the big canners' organizations and operations—every opportunity the market affords?

"The number of rows, the retail shelf visibility is largely determined by the rate of movement of the product off the shelf, for the very obvious and practical reason that the store is so busy, if it has real volume, that it cannot keep restocking its shelves every few minutes. It has to allot enough space to a type of product and to a brand to take care of its business.

"So, as a matter of saving its own labor, and giving its customers service the store allots most shelf space to the products which move fastest. There are exceptions, but they are usually temporary—even in the classic fight between private labels and national brands, whether in chains or independents."

The fight for retail shelf visibility actually is a fight for retail saleability and whether the smaller canner can sell as many women on buying his brand as the big canner.

I think we shall have to presume that the smaller canner has a good product and keeps up his quality; that he has reasonable finances to buy advertising and promotion and demonstrations. There is no law which requires the smaller canner to bite off more than he can chew, and keep on chewing. So, if we presume that our smaller canner undertakes to compete with big canners only in markets where he can reach a substantial number of women with his advertising—regularly—and can keep it up not for 13 weeks or 6 months, but year in, year out, then some other important factors come into play.

LARGE COMPANIES FALLIBLE

I have never seen a large company which is not fallible. If I may mix a metaphor, large companies are Goliaths with Achilles heels. They have organizational changes which mean changes in contacts with buyers; difficulties in establishing and maintaining standards of quality sometimes. Too often their left hands don't know what their right hands are doing. Advertising and promotional drives are started without the local men in charge of sales even knowing that they are under way, let alone receiving help in taking full advantage of them. We are working right now with numbers of large companies, trying to coordinate our merchandising work with their advertising. We beg them for display material which we offer to put up, and can't get it, too often. When we do get it, we have too much, too late. We beg for recipe books which we will put right into the hands of women in the stores, and most often can't get them. "What do you have?", we ask. "Give us something to work with, to get more women acquainted with your product." Often it is three months before we get something; sometimes it never comes. This lack of planning, of coordination between advertising, sales, and merchandising is wicked. It represents sheer waste, loss of power.

THE OPPORTUNITY

These are the things which give smaller canners their opportunity. Smaller caners can have a tight, easily controlled organization. No meetings to call to get authorizations; no buck-passing. They can work hand in glove with their brokers, make sure that selling and advertising and merchandising are coordinated. They can be quick and light on their feet, ready to dart in and seize an opportunity; to make friends with a grocer opening a new store, to hire a woman who is a superior demonstrator, to get special displays.

But the smaller canner needs something more to take full advantage of his opportunities:

(1) In addition to good quality and competitive prices, he needs a good label, distinctive and easy to recognize.

(2) Methods for cooperation with chains and big volume supermarkets.

(3) Practical display materials — the kinds of things the stores are glad to use, which make women want to buy his products. Recipes. Pictures of ways to use his product. New ideas. Use suggestions. All of these in good measure, or good quality—all the time—new, different, up-to-date.

(4) A method for getting these materials used, and his goods displayed. It's not enough to wish to win a market. The broker, the canner, or somebody needs to get out into the stores and slug some cases, price the product, stack the merchandise, police the shelves, put

up advertising. This kind of work at point of sale multiplies the results from advertising. The smaller canner can do it as well as a big canner, if he will.

Finally, he needs to be everlastingly on the job at every important point of contact, alert to seize every opportunity when the big canner stubs his toe, as he will.

NOT CAN HE BUT WILL HE

The question is not "Can the smaller canner compete?" but "Will he?" Usually he will succeed best if he takes one volume-opportunity specialty and concentrates upon it, advertises it, demonstrates it, promotes it, makes it the locomotive to pull his whole train of cars. Just as he doesn't try to envelop the whole United States at once, he doesn't even try to take the whole market at once. He determines where his own strength lies, or his competitors' weaknesses, and bores in. Inexorably! Unremittingly! Everlastingly!

He concentrates on pork and beans, or corn, or asparagus, or peaches—something which can deliver real volume—and tears in. Not for three months, or six months. But for three years, or six years. He establishes a reputation for having good products. His leader begins to pull some of his other products along, but that doesn't fool him. He keeps up the pressure on his leader until he gets into an unassailable position.

How does he finance it? Not out of this one item, probably, but out of his whole business. He may actually spend more on his leader than he makes out of it, but he does so deliberately as a matter of long-range business-building policy. The big canners can't, or didn't, match his expenditures on his leader. Maybe they think he's crazy; he's crazy like a fox. He begins to get better shelf displays, stack displays, free advertising tie-ins. All along the line, he gets plus advantages.

I can cite dozens of instances where smaller canners have virtually taken markets away from big canners, where small packers with profitable specialties have outsold and outsmarted big packers. Take Denver as an example! I'll wager that any of the big canners will tell you that Denver is one of the toughest markets they know. Why? Because there is a small, local canner who virtually owns the market. His brand has dominant shelf visibility, not on one or two specialties, but across the board. You almost have to hunt the shelves to find the labels of any of the big canners.

Do you think this an isolated case? Then let me tell you that a small canner from down-tate Illinois began to crowd into the Chicago market with his brand of kidney beans ten years ago. He advertised, and promoted, and merchandised until he got good distribution including some chain distribution. Today he is in the market with three volume items, and giving all of the big canners a run for their money in those lines.

How did he do it? By concentrating very largely on Chicago, working closely with his broker, by keeping at it, and using his imagination, and resourcefulness, and maintaining his personal contacts in the trade. Today he has numbers of other items which he sells but doesn't dare push in the Chicago market because he does not have the production to handle the demand he knows he would get.

Finally, the small canner needs imagination—and courage. He has to take to the stores' plans and schemes and methods to get his product before each store's customers. That means coupons, special displays, demonstrations —ways to get women to try his product. He may need tie-ins with related products.

But, given these ingredients of adequate advertising, promotion at point of sale, imagination and alertness, and a large measure of stick-to-itiveness, "a small caner can get retail merchandising visibility" which it challenges the big canner to match.

In any of the 50 or 100 major markets of this country, there is probably enough consumption capacity to take a large part of almost any small canner's entire output and when he wins it, pay him a handsome and permanent profit. And he will own his own business!

CAN THE SMALLER CANNER AFFORD A POINT-OF-SALE INVESTMENT

Summary of Remarks by

RALPH HEAD
Batten, Barton, Durstine and Osborn
Advertising Agency

Question is, can a smaller canner afford *not* to have a point-of-sale investment, or, "are you getting the most out of your point-of-sale investment?"—You already have one—the label.

(Editor's note: It should be noted that about every member of the panel has stressed the importance of the label. The question is, how many small canners have a label? Or, rather how many have dissipated this most important asset by letting the buyer put *his* label on the can—and for what?)

Mr. Head said that labels or packages are point-of-sale pieces because frequently they are the only things that talk to customers in self-service stores on behalf of *your* product. He suggested that canners take a long hard look at their labels and to consult with packaging experts as to how they might be improved. "Actually your label or package is about the only point-of-sale material which you can hope to get into today's super market without help or assistance from some source".

Other factors are important in activating the product at the point-of-purchase. Better shelf position, wider shelf frontage, special product displays, display material, shelf talkers. But, consumers are pre-sold through advertising and find any of several brands of like

Foremost authorities on consumer education and canned foods merchandising participate in panel discussion at National Canners Convention in Chicago, Saturday, February 19th. Subject of the panel's discussion was, "Can the Smaller Canner Merchandise?" Front row (left to right)—Miss Grace White, Family Circle Magazine, New York; William A. Free, Sr., Hungerford Packing Co., Hungerford, Pa., presiding; Miss Wilda A. Coleman, Mick-Or-Mack Stores, Salem, Va. Standing (left to right) —Don White, Don White, Inc., New York; Lyman L. Weld, Feature Merchandising, Inc., Chicago; J. Sidney Johnson, National Biscuit Co., New York; and Ralph A. Head, Batten, Barton, Durstine & Osborn, Inc., New York. Not present when the photo was taken, E. Norton Reusswig, Lestrade Bros., New York.

merchandise perfectly acceptable and they frequently buy the one they see first, the one they see the most of, or the one that gets their attention first as they shop in a little forest of 3, 4, or 5 thousand items.

Mr. Head advised smaller canners to accept brokers and advertising media with care; to take advantage of all materials offered by their national and product associations and to make the expenditure for advertising and point-of-sale a part of their budget just as production is a part of it.

He stressed the fact that many things should take place before a product reaches a point-of-sale. "Otherwise, it is difficult for a romance or love affair to develop when product and consumer do finally meet. Point-of-sale activity can sell a product, but other factors keep it sold and get repeat business." In this category he mentioned quality, good distribution, good and proper advertising—"We would all much rather meet someone about whom we have heard favorable things than we would a total stranger". It is difficult for point-of-purchase activity to work successfully unless these background factors are favorable. But, when you do have these background factors working positively, then product activation at the point-of-sale can and does work, as many people will verify."

Speaking of the cost of an advertising and promotion budget and its allocation, Mr. Head said that last year General Food's advertising ran around 8% of their sales dollar. The Maine Sardine Industry has a self-imposed tax of 25¢ for each case of sardines packed, which goes into a fund for advertising and promotion. This runs around 4 to 5 percent of their sales dollars and is over and above brokerage fees and other selling costs.

CAN THE SMALLER CANNER TALK TO THE CONSUMER

Summary of Remarks by
GRACE WHITE
Food Editor "Family Circle"

Canners should be less silent—or more vocal—in talking to food editors, Miss White told the audience. Food editors are a vital link between the canner and his customers, telling about new products, new facilities, anniversary, other plant news.

Like those who had preceded her, Miss White also pointed out that canners can also talk to the consumer through their labels. She advises them to make them attractive, simple, and informative.

In paying tribute to the NCA's Home Economics Division (which incidentally has been changed to "Consumer Service Department") for the execellent job of keeping food editors posted of new products, new recipe ideas and other helpful information, Miss White told her audience not to expect NCA to do it all. When you are just starting a new pack of convenience food, like stewed tomatoes, tell us of the sizes of cans or jars, how many servings in each, include a sample of your product and ask for comments. If you have a convenient plant operation, invite the editors to visit and view it first hand.

Developing the Institutional Market

RESTAURANTS— A BILLION-DOLLAR CANNED FOOD MARKET

From an Address by
HAROLD H. JAEGER
Can Manufacturers Institute

During 1955, the restaurant industry will buy more than $900 million worth of vegetables and fruits. This is over and above what consumers will buy in retail grocery stores. Before long, restaurants will pay out over $1 billion for fruits and vegetables. But even more exciting is the fact that this volume will double before another 20 years pass by.

The restaurant market is a sleeper market. The number of away-from-home eating places has been growing but many canners have looked upon this booming market as second-, third-, or even fourth-rate. My aim is to convince you here today that this is a first-rate and important market for every one of us.

The job that restaurants can do was demonstrated by the turkey growers. Remember when the only times you could find turkeys in the retail markets were before Thanksgiving and before Christmas? That was only a few years ago. The growers got restaurants to feature turkey on their menus over longer and longer periods. Today, turkey is not only a staple year-around item in restaurants but every supermarket across the country features turkey every month in the year.

Perhaps I can emphasize the importance of the restaurant market if I tell you that one of every four dollars Americans spend for food is spent for meals consumed away from home. Last year I told some of you that restaurants make up a $15 billion market. During the past year it has increased $1 billion to a present total of $16 billion.

FACTS ILLUSTRATING THE POTENTIAL

(1) POPULATION TREND: In 1925—117 million; 1955—164 million; 1975 (Bureau of Census prediction)—221 million—over 100 million more people in 50 years.

But the people of 1955 are working, living and relaxing under different conditions than they did in 1925. Work is easier and accomplishments greater. Leisure time has increased. Even royalty 50 years ago did not enjoy the comfort standards of the common man today.

All of these changes have encouraged eating out. More men at work are buying their lunches, more women are working and also eating out. School lunches

HAROLD H. JAEGER

are becoming the rule, rather than a rarity. In-plant meals are increasing year after year.

(2) INCOMES: 1954 value of all production was $356 billion. The President's Council of Economic Advisers estimates that by 1975 the figure will rise to $625 bilion in terms of 1953 dollar values.

More people will have more money to spend. More money left over after paying for their necessities that they can spend as they choose. With servants no longer available, eating out is a welcome relief from housework and cooking. A restaurant meal is not an occasional celebration but an increasing necessity. It's becoming popular now because of the servant situation. You invite guests for dinner and then take them out to dine.

With this background it is easy to see why this $16 billion market will exceed $35 billion by 1975.

SURVEY RESULTS

To find out how the industry will fare in 1955 and what can be done to serve restaurants better, CMI engaged Nejelski & Co. to survey the market. The survey covered 815 eating establishments of all types across the country. By pro-

jecting the purchases of these 815 units into national averages, 46 percent of the fruit and vegetable purchases (totaling a billion dollars) will go to fresh—$414 million; 35 percent or $315 million will go to canned; 19 percent, or $171 million will go to frozen.

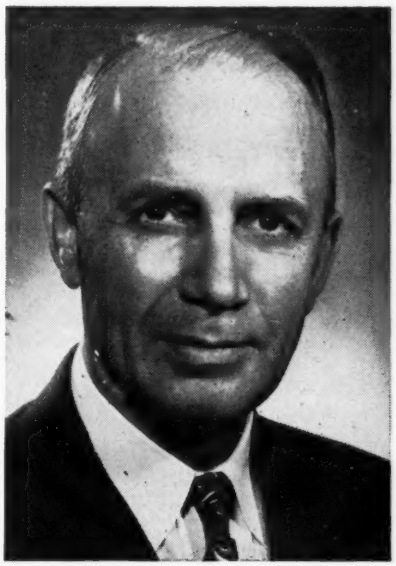
BUYING POLICIES AND SPECIFICATIONS—Although the chef or cook actually prepares the vegetables and fruits, only in 16 percent of the instances does he make the important decision whether these will be canned, fresh, or frozen. In 46 percent of the cases, the manager makes the decision, and in 39 percent the owner; the buyer in 7 percent of the cases; the dietitian in 4 percent; and the steward in 3 percent. Total adds up to more than 100 percent, because in some operations more than one person makes the important decision. That means that a salesman with an order book won't be too well received. Policy decisions are made on the basis of evidence, demonstrations and convincing arguments that canned foods build consumer satisfaction, more consistently, and even at lower costs.

RESTAURANT PROBLEMS—A National Restaurant Association study revealed that most pressing problems are personnel and cost control. The problem of hiring, training and holding competent people is most acute and was mentioned by 67 percent. The problem of controlling costs was mentioned by 25 percent. Canned fruits and vegetables, fully prepared and requiring only seasoning and heating—no trimming, peeling, or cutting, can help solve the personnel problem. Canned foods lend themselves perfectly to portion control and portion control is the basis of cost control.

MENU POLICIES—In 86 percent of the eating units studied, some form of standardized menu is used. That means that if a product is placed on the menu, it is dislodged only by another one that is proved to be more acceptable to the consumer, more consistent in quality, lower in cost, requiring less labor or any combinations of these.

Practically all of the eating places receiving recipe material save and use it. Seventy-four percent receive it, 71 percent save and file it and 68 percent pass this material around to those persons who can use it.

INFORMATION ON CANNED FOODS—Fifty-five percent of the restaurant operators get this information from suppliers, wholesalers and their salesmen; 22 percent from trade magazines and bulletins; 12 percent use their own judgment and test samples; 7 percent use Government bulletins; 6 percent buy national brands and an additional 6 percent get their information from canners' literature. Salesmen and representatives



CARLOS CAMPBELL, Exec. Sec.-Treas.
National Canners Association
Washington, D. C.

who are relied on most, not only know their canned products, but understand the restaurant operators' problems and needs.

Restaurant operators read their trade magazines zealously. More so than in other fields. Canned foods advertising appearing in restaurant and hotel trade papers only rarely contains the kind of information and evidence on which restaurant operators can base their decisions.

ORDERING HABITS—Twenty-seven percent of the restaurant operators order by price; 58 percent by grade; 46 percent by brand names; 33 percent by cutting cans; and 29 percent by size of can. Obviously some use several factors in ordering.

Seventy-nine percent of the fresh produce is delivered daily; 60 percent of the frozen foods are delivered more than once a week. By contrast, 66 percent of the canned foods and dry groceries are delivered once a week, or less.

The average restaurant operator is contacted by twice as many canned foods and dry grocery wholesalers than for fresh produce, frozen foods and canned meats, so that competition is keener.

CANNED AND FROZEN FOODS COMPARED—Sixty percent of restaurant owners and managers prefer canned foods when considering cost of storage; twenty-five percent had no preference and 15 percent preferred frozen. Considering purchase price—51 percent prefer canned, 38 percent no preference, 11 percent frozen; storage needed—45 percent canned, 30 percent no preference, 25 percent frozen; amount and ease of handling before use—45 percent canned, 30 percent no preference, 25 percent frozen; variety and size of package—39 percent canned, 45 percent no preference, 16 percent frozen; amount of spoilage—35 percent canned, 51 percent no preference, 14 percent frozen; avoiding out of stock—30 percent canned, 55 percent no preference, 15 percent frozen; uniform quality—24 percent canned, 52 percent no preference, 24 percent frozen.

It will be noted that on the four factors, "variety and size of package," "amount of spoilage," "avoiding out of stock," "uniform quality," the area of no preference goes up sharply. These are the points on which canned fruits and vegetables have a decided edge so that they present a challenge to the selling abilities of the canning industry.

Cooks and chefs are much more detailed in their thinking. Such factors as speed in preparation, ease of cost control, waste in cooking, flavor and texture, color and appearance are their first concern. These came up with a vote heavily in favor of frozen foods. Only in the first three categories, cost of storage, purchase price, and speed in preparation do they consider canned foods superior. Their preferences are deep rooted and can be measured by the height of the "no preference" areas. Only in the categories of flavor and texture, color and appearance, and ease of package disposal are they sufficiently undecided to be open to convincing.

Canned products have a decided edge over frozen foods in the variety of packages available. However, the facts have not been impressed on the minds of chefs and cooks. Same is true in ease of cost control, labor cost, and easy portion control. The canning industry has been very negligent in selling the merits and values of canned vegetables and fruits to restaurant owners, managers and chefs, but the biggest sales and promotion job needs to be done with the chefs and cooks.

CANNED FOODS USAGE — Vegetables that cannot be frozen readily are used primarily in the canned or fresh form. Canned tomatoes were used in 73 percent of the eating places, fresh 82 percent, frozen in less than 1 percent. Canned beets 71 percent; fresh 23 percent. Canned sauerkraut 68 percent; fresh 7 percent. Canned corn 55 percent; frozen, 43 percent; fresh corn in season by 21 percent. Green beans, canned, 54 percent; frozen 37 percent; fresh 19 percent. Peas, 48 percent canned, 62 percent frozen, 9 percent fresh. Spinach 23 percent canned; 43 percent frozen; 27 percent fresh. Lima beans 16 percent canned; 54 percent frozen; 11 percent fresh. Asparagus 40 percent canned; 32 percent frozen; 17 percent fresh.

Peaches, canned 79 percent; frozen 23 percent; fresh 18 percent. Canned applesauce is used by 73 percent of the restaurant operators, frozen applesauce by 3 percent, 10 percent make their own. Pears 71 percent canned; 11 percent fresh; 1 percent frozen. Fruit cocktail

only 1 percent use frozen and 15 percent make their own. Cranberries, canned, are bought by 57 percent; 31 percent make their own; 3 percent buy frozen.

Other commodities — canned apricots 51 percent; fresh and frozen 12 percent; Red cherries canned 38 percent; frozen 31 percent; purple plums canned 34 percent, fresh or frozen 9 percent; grapefruit canned 30 percent, fresh 35 percent, frozen 3 percent; black cherries, canned, 27 percent, fresh and frozen 3 percent; pineapple, canned, 14 percent, fresh 17 percent, frozen 5 percent; blackberries, canned, 14 percent, frozen 18 percent, fresh 7 percent.

Every canned fruit or vegetable juice outsells either frozen or fresh except orange juice. Canned tomato and blended juices are used by almost all eating places. Very few buyers get canned or frozen prune, pineapple or apple juice. Sixteen percent buy frozen or fresh grapefruit juice, but 74 percent buy canned.

CONTAINER SIZES — One of the most unexpected and startling discoveries of the survey was that restaurants buy canned foods in other sizes than 10's. To be sure, more No. 10's than any other sizes are bought—37 percent of the total, but the balance is taken up by other sizes—No. 2½'s (16 percent), No. 303 and Picnic cans (15 percent), No. 5's (14 percent), No. 2's (3 percent) and other sizes (14 percent).

IMPORTANT TRENDS IN THE RESTAURANT INDUSTRY

Sumary of Remarks by
LEO NEJELSKI
Nejelski & Co., Management Consultants

Mr. Nejelski listed seven important trends.

(1) Kitchens Will Become Smaller—Labor costs are still increasing and competent help is difficult to recruit. So it is no mystery why more of the food preparation work is being done by restaurant suppliers outside the restaurant. Reduction in kitchen space will mean more tables and counters as the walls are moved back.

(2) Cost Accounting Will Become Better Standardized—This is necessary due to the keen competition. It means the restaurant owner will recognize and handle items that lend themselves to cost control and cost reduction.

(3) Labor-Saving Equipment Will Increase.

(4) Look for More Self-Service — Nothing sells food better than good display. Personnel will continue to be the major problem of the restaurant business for some time to come.

(5) More Aggressive Advertising Will Be Used.

(6) More Between-Meal Sales Will Be Developed—The coffee break awakened many operators to the possibilities of between-meal sales.

(7) Take-Out Volume Will Grow — Restaurant customers are showing increased interest in pre-cooked foods to be consumed at home.

IMPORTANT COST AND QUALITY FACTORS IN CHOOSING FOODS

Summary of Remarks by
GEORGE D. HANBY
Cooley's Cupboards

Food and labor costs take 75 cents out of every dollar rung up at the cashier's counter. Customer satisfaction and cost control are the two best keys for selling more canned foods to restaurants. Canners are in strong position to increase their share because canned foods offer both predictable quality, good cost and quality control. Only reason restaurant operators do not use more canned foods is that they have not been sold.

WILLIAM U. HUDSON, Vice President
National Canners Association
Washington, D. C.

Canners can help cost control by supplying not raw material that needs flavoring and cooking, but finished dishes so that all the chef has to do is open the can, heat and serve. In addition to processing them, season them also. Work up good food combinations. Make it as easy as possible to serve good foods economically.

Tell restaurants that canned foods do not need trimming and cleaning. Tell them how cans, other than the No. 10, enable them to operate more efficiently—the 303 for special requests not listed on the menu, for instance.

Show them how to fit the quality of canned foods to their needs. For example standard qualities in stews, fancy qualities in salads.

Show them how they can obtain eye appeal with canned foods, and at the same time do a better job in improving appearance. Do a better job of selling, promoting and advertising. "Actually, the reason why, in general, many restaurant buyers think first of fresh foods, then of frozen and last of canned, has little to do with the real qualities of canned foods. The reason is that canners have tended to let the restaurant market develop by default, while fresh foods have had the support of tradition behind them, and frozen foods have stolen a march on you by saying they are next best to fresh!

LABEL INFORMATION MOST USEFUL TO THE RESTAURANT OPERATOR

Summary of Remarks by
BEATRICE HUGHES
Harding's Restaurants
Chairman, National Restaurant Assn. Technical Advisory Committee

Restaurant operators have a difficult time finding qualified personnel. They either look long and hard and pay high for skill and experience, or they must tailor and control their operations so that they can be conducted by less experienced people. This means that they must rely heavily on their suppliers for help in making food preparation as simple and quick as possible.

Unless food service personnel are told how to use canned foods, they are likely to mistreat them through ignorance. They may overcook and mash foods which already have been cooked. They may prepare them so that they lose flavor and color.

The label is the best place to tell them "how to do it." The label should tell in detail not only what, but how much—and here Miss Hughes stressed drained weight in brine packs, pointing out that the total weight of brine and product is of no value whatsoever They want to know how many 2 and 3 oz. servings are in a given can size. In fruits, they want to know the average number of pieces.

Restaurant operators want definite information on quality, variety, where grown, etc. A dish of constant quality requires that the ingredients be of constant quality. The careful restaurant operator undoubtedly overlooks no small detail in its search for constant quality. Miss Hughes mentioned that they consider even the soil and climate, stating that peas from Wisconsin have a different flavor, for instance, from those grown in other areas.

The restaurant operator wants to know how the product in the can has been treated. What seasonings, if any, have

been added. What should or should not be done. Should it be cooked or just heated and served. New recipes are especially welcome and these should be detailed and presented step by step with emphasis on the number of servings that will be made from the entire contents of the can.

FRUIT AND VEGETABLE SPECIFICATIONS THAT ARE MOST IMPORTANT TO RESTAURANTS

Summary of Remarks by

JOSEPH SCHENSUL
Schensul's Cafeteria
Director, National Restaurant Assn.

The restaurant field is the fourth largest retail market in America. The canning industry has allowed its rightful share of this market to go by default. Not because there is anything intrinsically wrong with canned foods from the restaurant's standpoint, but because canners have given little thought to their needs and problems, or to the opportunities for canned foods in the market.

The three big issues restaurants must meet every day are controls, quality and costs. These three are indivisible; what affects one generally affects the others.

Cafeteria operators, particularly, are looking for a pea which will stand up on the steam table without going mushy, yet which are just as tender when they come out of the can as when they have been warmed up and kept on the steam table for half an hour. This means development of a particular strain of peas. Speaking of the steam table, no one has yet figured out the best temperatures at which to hold various canned vegetables. There must be a best temperature for holding peas, possibly another for corn. Steam-table standards would be welcome. Then too, different raw materials are required for different uses. When the product is to be used as a final dish with a minimum amount of cooking, it requires a different characteristic than one to be used as an ingredient in a dish prepared in the restaurant—onions to be recooked in a stew should have a body and texture different from onions to be simply heated and served.

Speaking of body and texture, restaurants would like canned pears, apples, or berries, similar to home styled canned peaches which are close to the cooked fresh product. Similarly, research in the development of a standard product, not just its quality but the evenness of its quality, providing consistent standards of weight, color, texture, and so on, would be most helpful.

Can sizes is another area where research providing the best use for specific situations would be helpful.

Mr. Schensul suggested that maybe the cook could be reduced on restaurant supplies and a date stamped on the can because extra long shelf life is not needed here as it is in consumer usage.

He said that restaurant owners are eager to cooperate with the canning industry in research to help develop and meet specifications that recognize the differences between household cooking and restaurant meal preparation.

H. THOMAS AUSTERN, Chief Council
National Canners Association
Washington, D. C.

CANNER WHOLESALER RELATIONS THAT PRODUCE MAXIMUM INSTITUTIONAL SALES

Summary of Remarks by

ORA CHIDESTER
V. P., John Sexton & Co., Chicago
Director, Nat. Institutional Wholesale Gro. Assn.

The most effective sales programs to restaurants and institutions grow out of detailed knowledge about the problems and needs of the operators. Up to the present time, the canning industry has been negligent in analyzing these needs. The study by the Can Manufacturers Institute is the first major attempt to determine how canned foods can be sold more effectively to the restaurant industry.

The most successful salesmen for canners, brokers and wholesalers are those who have had direct experience in restaurant operations or are intimately familiar with them. They soon learn to distinguish the individual characteristics of each restaurant or institution. Restaurant operation varies considerably. Knowing the factors that enter into making the decisions in each operation become all important.

The restaurant industry is largely a processing industry. Price per case is not nearly as important as how the product can be used to produce foods that will be attractive, appetizing and profitable. Consequently, the salesman must be familiar with how the product can be utilized.

Restaurant operators want facts. They do not respond favorably to general or emotional arguments. Evidence results either from experience or experiment is vitally important.

Most restaurant operators do not have interest in shopping around. Once they find a reliable source of supply, they remain there loyally.

THE USE OF CANNED FOODS BY RESTAURANTS AND CAFETERIAS

Summary of Remarks by

DR. H. WAYNE BITTING
Agricultural Economist, Agricultural Marketing Service, U.S.D.A.

This is a report on one phase of a broad study of the *frozen* food industry being conducted by the Department. It necessarily sheds light on the current position of *canned* fruits and vegetables in the restaurant and cafeteria markets. A full report of the *frozen* foods phase of the study will be issued in the near future. The study was based upon 480 restaurants and cafeterias reporting their purchases during two 4-week periods in August and November, 1954. This is the first time that any of this information has been made available. The data were collected under contract with S-D Surveys, Inc., as authorized by the Agricultural Marketing Act of 1946 (RMA Title II).

WHERE IS THE RESTAURANT MARKET LOCATED?

TABLE I—SALES OF MEALS IN RESTAURANTS AND CAFETERIAS AND PERCENTAGE DISTRIBUTION OF THE POPULATION BY REGIONS IN THE UNITED STATES, 1948

Regions	Percentage of Total Meals Served in Rest.	Percentage distribution of population
	Percent	*Percent*
New England and Mid. Atlantic (I)	33.4	26.3
East and West North Central (II)	27.1	29.5
South Atlantic, East and West South Central (III)	22.3	31.2
Mountain and Pacific (IV)	17.2	13.0
Total United States	100.0	100.0

DO RESTAURANTS USE A RELATIVELY LARGER PERCENTAGE OF CANNED VEGETABLES THAN ARE CONSUMED IN THE OVERALL MARKET?

TABLE II—CANNED VEGETABLE USAGE AS A PERCENTAGE OF RESTAURANT PURCHASES AND 1953 PRODUCTION

Vegetables	Percent of Rest. Pur. Canned (Aver. Aug. and Nov.)	Percent of 1953 crop canned[1]	Civilian Disappear. (1953) Percent
Corn	57.8	57.1	56.2
Green beans	62.3	37.7	35.1
Peas	54.4	67.6	68.4
Carrots	21.9	6.2	5.1
Spinach	22.4	30.8	31.0
Lima Beans	25.9	26.3	25.5
Asparagus	64.1	42.9	46.5
Mixed vegetables	44.4	47.6	57.1
Average for 8 vegetables	47.7	46.0	45.8

[1] Based on fresh weight equivalent.

WERE THE QUANTITIES OF CANNED FRUITS AND VEGETABLES PURCHASED IN AUGUST AND NOVEMBER ABOUT THE SAME?

TABLE IV—RELATIVE QUANTITIES OF SELECTED FRUITS AND VEGETABLES PURCHASED IN CANNED FORM, BY RESTAURANTS, AUGUST AND NOVEMBER 1954

Commodity	Percent purchased in canned form: August Percent	November Percent
Vegetables:		
Corn	50.3	68.6
Green Beans	60.5	64.1
Carrots	22.1	21.6
Peas	58.2	50.4
Spinach	26.3	19.5
Lima Beans	29.1	21.4
Asparagus	66.3	61.0
Mixed vegetables	46.7	42.8
Average	46.4	49.3
Fruits:		
Apples	35.4	30.6
Peaches	19.8	77.5
Cherries (sour pitted)	39.7	22.6
Average	35.4	37.0

DO ALL RESTAURANTS USE CANNED FRUITS AND VEGETABLES?

A fairly large number of restaurants do not use some of the major canned fruits and vegetables. In fact, some of the restaurants did not use any of the listed fruits and vegetables in any form (Table III), and others used only one or two.

Canned green beans, peas, corn, asparagus, and peaches were purchased by more restaurants in the canned form than in any other form. This was not true for carrots, spinach, lima beans, mixed vegetables, apples, and cherries.

ARE THERE DIFFERENCES AMONG REGIONS IN THE PORTION OF CANNED FRUITS AND VEGETABLES USED BY RESTAURANTS?

TABLE V—RELATIVE QUANTITIES OF SELECTED FRUITS AND VEGETABLES PURCHASED IN CANNED FORM BY RESTAURANTS, BY REGIONS, AVERAGE AUGUST AND NOVEMBER 1954

Commodity	Percentage used in canned form: All regions (Per.)	Region I[1] (Per.)	Region II[2] (Per.)	Region III[3] (Per.)
Vegetables:				
Corn	57.8	48.5	69.8*	48.1
Green beans	62.3	47.1	82.5*	58.6
Carrots	21.9	17.3	35.4*	11.8
Peas	54.4	41.5	61.0	75.4*
Spinach	22.4	12.5	27.2	42.6*
Lima beans	25.9	18.0	39.4*	22.0
Asparagus	64.1	77.4	46.1	86.8*
Mixed vegetables	44.4	27.7	58.0	58.5*
Average (8 veg.)	47.7	35.9	61.2	47.6
Fruits:				
Apples	32.6	21.3	16.7	62.9*
Peaches	51.4	38.9	59.6	60.9*
Cherries (sour pitted)	21.4	17.1	18.4	34.3*
Average (3 frts.)	36.2	25.8	29.0	59.9

[1] Region 1—New England and Middle Atlantic States.

[2] Region II—East and West North Central States.

[3] Region III—South Atlantic and East and West South Central.

* Region having highest proportion purchased in canned form.

TABLE III—PERCENTAGE OF RESTAURANTS PURCHASING SELECTED FRUITS AND VEGETABLES, AUGUST AND NOVEMBER 1954

Commodity	Percent of restaurants purchasing: In any form August Percent	In any form November Percent	In canned form August Percent	In canned form November Percent	In other than canned form August Percent	In other than canned form November Percent
Vegetables:						
Green beans	70.8	70.0	47.1	51.7	34.9	31.6
Peas	68.2	76.8	50.6	55.1	31.6	33.3
Corn	65.5	61.0	39.4	46.6	41.6	22.8
Carrots	55.1	59.7	17.3	16.5	44.1	51.1
Spinach	45.7	51.3	22.0	22.4	29.8	34.2
Lima beans	45.5	42.6	16.5	14.3	32.9	32.3
Mixed vegetables	14.5	16.6	5.1	6.1	9.6	9.9
Asparagus	14.7	12.0	8.8	8.2	6.1	6.8
Fruits:						
Apples	39.0	53.6	15.7	18.6	28.6	46.4
Peaches	49.2	39.0	30.0	34.0	28.8	8.2
Cherries (Sour pitted)	19.4	27.0	7.1	13.1	13.5	15.2

HOW DOES PRICE OF THE MEAL AFFECT THE USE OF CANNED FRUITS AND VEGETABLES?

On the average, a higher proportion of canned fruits and vegetables were used in restaurants serving meals priced below one dollar (table 6). However, in the case of lima beans, corn, and carrots, this relationship was not observed. In fact, canned lima beans had relatively greater sales in restaurants serving higher-priced meals.

TABLE VI — RELATIVE PROPORTION OF CANNED FRUITS AND VEGETABLES PURCHASED BY RESTAURANTS GROUPED ACCORDING TO PRICE OF MEAL, AVERAGE AUGUST AND SEPTEMBER 1954

Commodity	Percentage purchased in canned form: Price of meal under $1 (Percent)	Price of meal $1 or more (Percent)
Vegetables:		
Corn	57.9	57.6
Green beans	71.1	54.7
Carrots	21.6	22.0
Peas	78.1	39.0
Spinach	34.9	11.9
Lima beans	20.1	29.9
Mixed vegetables	69.8	29.8
Asparagus	76.5	57.1
Average (8 vegetables)	53.7	42.8
Fruits:		
Apples	37.5	27.5
Peaches	62.1	44.3
Cherries (sour pitted)	17.4	26.2
Average (3 fruits)	40.1	32.5

HOW DOES SIZE OF RESTAURANT AFFECT THE USE OF CANNED FRUITS AND VEGETABLES?

TABLE VII — RELATIVE PROPORTION OF CANNED FRUITS AND VEGETABLES PURCHASED ACCORDING TO SIZE OF RESTAURANT, AVERAGE FOR AUGUST AND NOVEMBER 1954

Commodity	Size of restaurant[1]: A	B
Vegetables:		
Corn	75.5	52.1
Green beans	70.9	59.5
Carrots	22.8	21.4
Peas	84.1	45.8
Spinach	43.5	17.7
Lima beans	40.5	22.9
Asparagus	76.7	61.9
Mixed vegetables	65.1	32.5
Average (8 vegetables)	62.4	43.0
Fruits:		
Apples	42.9	30.9
Peaches	66.0	46.4
Cherries	49.1	15.9
Average (3 fruits)	52.4	32.7

[1] Size A includes restaurants with 6-11 employees. Size B includes restaurants with 12 or more employees.

In summarizing these findings, it may be said that variations occur between individual fruits and vegetables, from region to region, and between sizes of restaurants and prices of meals. There is therefore no substitute for knowing the market.

RAW PRODUCTS CONFERENCES

Saturday, Sunday and Monday, February 19-20-21

PROCUREMENT of Raw Products

PRESIDING: W. S. Macklem, Chairman Raw Products Committee

The first raw products conference was held on Saturday afternoon, with W. Stanley Macklem, Chairman of NCA's Raw Products Committee presiding. The conference was in the form of a panel discussion devoted to the theme, "How can we persuade farmers to grow our canning crops."

MATERIAL AND FINANCIAL INDUCEMENTS TO GROWERS

Summary of Remarks by
MARK H. MITCHELL
The Larsen Company

No price you can offer nor free service you can provide is sufficient inducement in itself. There are no shortcuts in solving a grower relations problem. Growers must have faith and confidence in the canner and that must be earned through a long-term program based on sound policies related to an old, old principle—the Golden Rule.

There must be more soil conservation and better soil management. There must be further development and use of improved varieties, better equipment and methods, fungicides, insecticides, etc. Canning crops must be included in a balanced farm program. Canning crop dollar returns must be competitive with other crops. There are situations in the production of some crops making it definitely necessary that we step in with assistance to growers, with specialized equipment, or service, or labor.

Persuading farmers to grow our canning crops involve setting up an agricultural policy, developing the courage to follow it, and providing competent field representation to make it effective.

SPECIFIC INDUCEMENTS

(1) PRICE—Price per ton or pound isn't nearly as important as net return per acre and this need not necessarily match the return for the competitive "hot" item, the best paying crop for any one year. There'll be plenty of grower incentive if on a year-in, year-out basis, price can be multiplied by a yield to give returns per acre competitive to the average of alternative and comparable crops.

Prices can be scaled to reflect some relationship in quality, or perhaps, yield. The canner should be willing to pay more for the best if that's what he wants. Many flat price deals, or even graded price deals, do the opposite. Canners cannot expect to acquire top quality produce consistently on a field run price basis.

There's more to price than the scale. The price should be printed in the contract, not written in in pencil. When growers know there is just one deal and no one gets a nickel more per ton, nor a nickel less than anyone else for comparable quality, that all receive payment at one time, neither earlier nor later than due dates, there is little room for dissatisfaction or suspicion.

(2) CHARGES—There are as many differences of opinion regarding the do's and don'ts on charges for seeds or other materials furnished growers, as there are individual processors. Since the price to be paid for the produce is always adjusted according to the amount of these charges, one might consider that there is no real element of grower incentive in this matter, but there is an element of incentive and it can work two ways—for or against the processor.

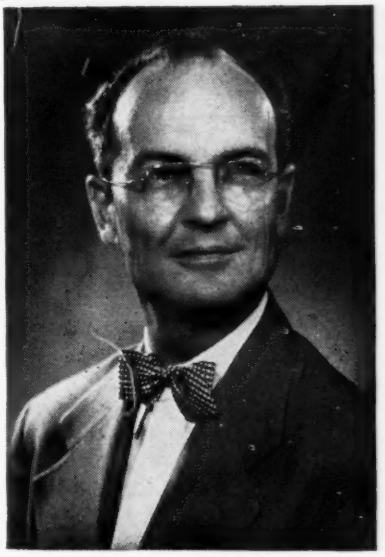
(3) GROWER SERVICES — The loan of planters or harvesting equipment or the performance of dusting, spraying or harvesting services come under the head of grower inducements. It has become necessary to offer growers at least some degree of cooperation toward the lowering of production costs. Then, too, many of our crops such as peas and sweet corn require special equipment so that frequently there is no choice on the canner's part. He either offers the services or else. Offering these services on a pre-established fee basis is preferable to offering them at cost. This method provides insurance to the grower against excessively high costs due to inefficient labor or inadequate equipment. Offering the services or materials free of cost doesn't fool anyone. No one is so naive as to think it possible to get something for nothing. Compensating adjustment in such cases shows up in a lower price and these costs are not recognized by the grower.

GROWER-PROCESSOR RELATIONS FROM THE STANDPOINT OF THE VEGETABLE GROWER

Summary of Remarks by
JAMES D. SWAN, JR.
President, Vegetable Growers Association of America

To emphasize the interest of the grower in the processing industry, Mr. Swan read a resolution adopted unanimously at the recent Syracuse Convention of the Vegetable Growers Association of America. The resolution appeared spontaneously on the floor from one of the delegates. It reads:

"The production and processing of vegetables, now a highly specialized industry, owes its rapid growth to the consumer's desire for convenience, quality, uniformity, and appearance, all at a reasonable cost. Continued improvement of the techniques of production, as well as processing and distribution, is a common responsibility of both grower and processor. Both desire a more stable volume of quality vegetables for the processor so as to increase the efficiency of the processing plant, and an attractive market for the carefully planned and grown vegetables of the producer. Processors should assume more responsibility in the development of mutually profitable vegetable crop processes.



CHARLES H. MAHONEY
Director Raw Products Bureau
National Canners Association

"We invite the National Canners Association and State Canner Associations to join us actively in establishing this program as a permanent undertaking."

Mr. Swann pointed to the technological advances and the high degree of mechanization which are now an accepted part of the farming operation, saying that the processor has one of three choices—(1) to grow his own crops and accept the risks and expenses of modern farming operations, (2) shrug his shoulders and decide to purchase all his raw products from a comparative few very large and highly specialized farmers or (3) and probably preferably persuade a larger number of good growers to contract.

This last he said, can be accomplished by proving that you are sincerely offering an exchange—to furnish them a certain market for a promised quantity in exchange for a lower price than fresh packages might bring—if they found a market. Show them that the processor has developed an organization with personnel that is as well informed on production of raw products as on processing. Make sure this personnel knows the viewpoint of the grower and keeps fully up to date on new developments in fertilization and disease control, residues, etc. "Will you blame your growers next fall if the Food and Drug Administration condemns a

(Continued on Page 20)

Here's the second big ad of '55

On the facing page, you see a black and white reproduction of an ad called Pacific Coast Chowder Supper. In the March 14 issue of *Life* and the April *McCall's,* your customers see Pacific Coast Chowder Supper in delicious full-color and on two pages. It's the second in Canco's booming 1955 advertising campaign.

Pacific Coast Chowder Supper will pique the appetites of a potential audience of 37,000,000. Tempting recipes will show how to prepare the featured dishes employing a variety of canned foods.

Canco aims these ads directly at your ultimate customer . . . the busy homemaker. In them, she sees appetizing, intriguing meals at low cost. And with these meals in mind she goes to the store to shop for *your* canned foods and beverages.

Cash in! Make sure that your retail outlets spotlight your brands for these meals; price them attractively, and display them prominently.

So with Pacific Coast Chowder Supper, Canco continues a truly spectacular campaign . . . actually creating a buying urge . . . and helping build the prestige of all canned foods and beverages. The profits are yours . . . if you take advantage!

FREE!

Mats or photographs for newspaper advertising . . .

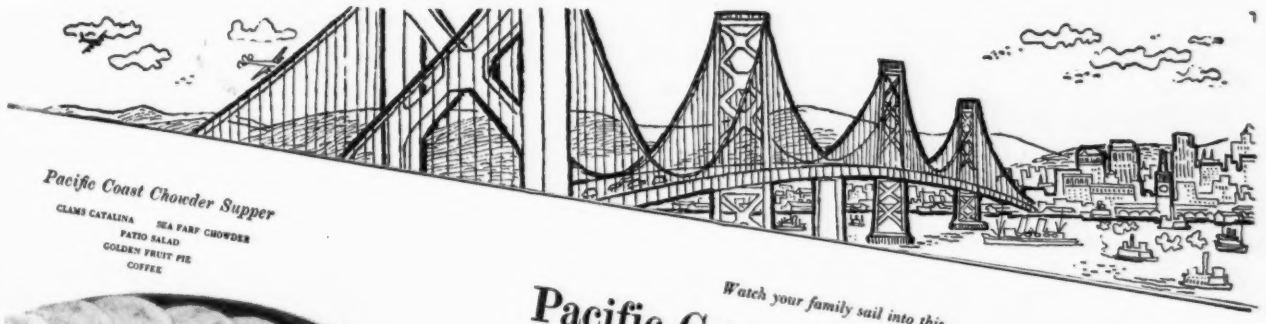
To help YOU get YOUR brand featured in food retailers' newspaper ads, Canco has mats for the main illustration of this Pacific Coast Chowder Supper ad (2 col. 65 screen) for any tie-in program you may work out with your retailers. A mat or photograph will be sent FREE direct to any retailer planning such a promotion. Requests should be addressed to: American Can Company, Sales Promotion Division, 100 Park Avenue, New York 17, N. Y.

Go first to the people who are first!

CANCO AMERICAN CAN COMPANY

New York, Chicago, San Francisco; Hamilton, Canada

...from Canco to your customers!



Pacific Coast Chowder Supper

CLAMS CATALINA
SEA FARE CHOWDER
PATIO SALAD
GOLDEN FRUIT PIE
COFFEE

Watch your family sail into this

Pacific Coast Chowder Supper

It's a breeze to fix—with today's most-delicious-ever canned foods!

You'd expect the people who live along the shores of one of the world's greatest oceans to be lovers of sea food—and experts at preparing it.

Pacific-Coasters live up to expectations! And no matter where you live . . . even if it's hundreds of miles from any coast . . . you can share their fresh-from-the-ocean catches and their "catchy" way of cooking.

For all the major foods in *this* typical West Coast-style supper are available at your grocery in Canco cans . . . the cans made by American Can Company.

For an appetite-piquing starter—try this clam creation. No cleaning or steaming—when you "dig" the clams from cans. Yet they have real oceany flavor.

CLAMS CATALINA

Combine 1 can (7 or 10½ oz.) minced or whole clams (or oysters), well drained; 3 anchovy fillets, chopped; 3 tablespoons chopped green pepper; and 1 pimiento, chopped. Spoon into 4 sea food shells. Top each with ½ strip bacon, if desired; broil under medium heat 3 minutes, or until bacon is crisp.

Now, for the main course, a steaming tureen of chowder—so whiffing-good, so *eating*-good that it's practically guaranteed to turn even a non-fish-fan into an enthusiastic chowder hound.

SEA FARE CHOWDER

1 can condensed cream of tomato soup
1 can condensed cream of mushroom soup
1½ cups milk
1 can (1 lb. 4 oz.) white potatoes, drained and cut in quarters
1 can (8 oz.; 1 cup) peas, drained
1 can (7-8 oz.) tuna or salmon, drained and flaked
1 can (6½ oz.) crab meat, drained and flaked
2 tablespoons grated onion
1 cup (½ pt.) light cream

Blend tomato soup, mushroom soup and milk. Add potatoes, peas, tuna (or salmon), crab meat and onion; heat thoroughly. Just before serving, add cream; heat well, but do not boil.

No "Far West" meal is complete without salad. It is often served as a separate course before the entree. Whether you adopt that custom—or bring it on with the chowder—here's a delicious*ly different* recipe.

The canned green beans (whole, cut or French style) save time—and give you more vitamins than you often get in fresh-shipped varieties, because they're picked at prime, processed *immediately*.

PATIO SALAD

Combine ⅓ cup wine vinegar, ⅓ cup salad or olive oil, 1½ teaspoons salt, ½ teaspoon paprika and 1 clove garlic; pour over 1 can (1 lb.) green beans, drained; cover; chill. To serve, remove garlic; drain beans, reserving dressing. Toss 3 cups shredded cabbage with part of reserved dressing. (Save remainder for another salad.) Arrange beans and cabbage on plates; garnish with ripe olives.

For dessert—try this superb chiffon pie laced with the whole variety of fruits that come all prepared, ready to use, in canned fruit cocktail. You can make it in the morning—or even the day before.

GOLDEN FRUIT PIE

1 envelope unflavored gelatin
¼ cup cold water
1 can (1 lb.) fruit cocktail
¼ cup sugar
1 can (6 oz.) frozen orange juice concentrate, (or orange beverage concentrate) undiluted
3 egg whites
1 baked 9-inch pastry shell
Toasted slivered almonds

Sprinkle gelatin over cold water; let stand 5 minutes. Drain fruit cocktail, reserving syrup. Measure ¼ cup syrup, adding water if necessary; bring to boil. Pour over gelatin; add sugar; stir until gelatin and sugar are dissolved. Blend in orange juice or beverage concentrate; chill until thick and syrupy. Beat egg whites until stiff but not dry, using hand or electric beater; beat in gelatin mixture thoroughly; chill until almost firm. Fold in drained fruit; turn into cooled pastry shell; chill until firm. Garnish with almonds.

Note: Whenever you do not use a full can of food, cover and keep the remainder in the refrigerator *right in the can.* It's safe—and it's sensible!

SPECIALLY GOOD COFFEE

Make it by your favorite method—but make it specially good by using vacuum-packed coffee in cans.

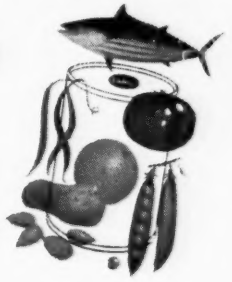
The key to good coffee is the key that comes with vacuum pack cans. If coffee is exposed to air, it loses roaster-fresh aroma and flavor. American Can scientists invented the familiar "squat" can with the easy "zipper" opening and replaceable lid that makes it possible for you to buy really *fresh*, vacuum-packed coffee.

For greatest convenience, get your cream—and milk—in Canco's disposable paper container with the flat top that opens and closes so easily.

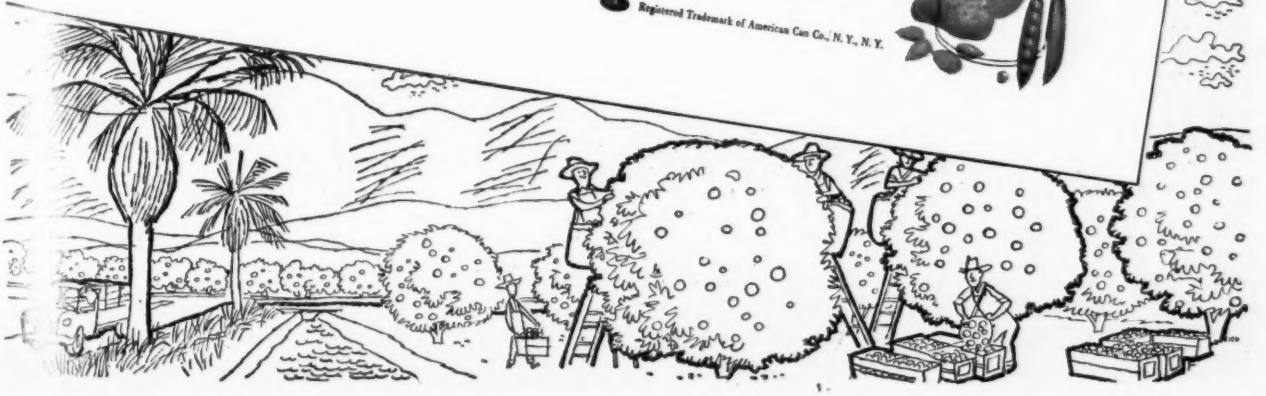
These recipes serve 4. You may use can weights that vary slightly from those given here. Recipes were developed in Test Kitchens of American Can Co.

If it comes in a Canco can—it comes to you at its best!

American Can Company



Registered Trademark of American Can Co., N. Y., N. Y.



thousand cases of your finished goods because of insecticide residues?"

The Vegetable Growers Association President called attention to the predicament of corn canners today, stating that if the growers had donated the raw product they would still be in trouble. With the processors production cost totaling about 40 percent of the dollar, distribution cost another 40 percent and the raw product cost but 20 percent, there's relatively little room for cost reduction on the raw product. He suggested that the grower and the processor working together and observing USDA acreage guide to help minimize the ruinous gluts in our various crops that occur from time to time.

CONTRACTS AS AN ELEMENT OF CANNER-GROWER RELATIONS

Summary of Remarks by
HAMILTON CAROTHERS
Office of Counsel, N.C.A.

Mr. Carothers pointed out that grower contracts must necessarily vary according to the nature of the crop, area practices, quality control problems of individual canners and state law, so that the final form that the contract will take must depend on the individual canner. At the same time he gave three good reasons why these crop contracts are a matter of industry concern.

(1) The first reason is strictly legal. If it is to have legal significance, it must be enforceable. Canners have been denied specific performance when courts concluded that the contract was too one-sided.

(2) On many occasions government, both local and federal, have shown an interest in crop contracts employed by the canning industry. A congressional committee interested in marketing order proposals may wish to see evidences of the contract relationship between canner and grower. An official of the Department of Agriculture seeking a solution to the diverted acreage problem may solicit sample copies of industry contracts to guide department policy. In such instances, the actual contract documents themselves may be a stronger voice in support of the industry's position than all the argument which may be presented. There are substantial advantages to the grower in the industry's advance contract procedures, but unless these grower benefits are plainly shown on the face of the contract, the contract is useless for these purposes. Some contracts, for instance, fail even to express a canner's obligation to accept the crop.

(3) Canner-grower contract is the most direct and formal expression of the canner-grower relationship. Such a contract can be either an invitation to deal or a repelling influence. A contract unnecessarily injecting irritants into the relationship disservices both parties.

SPECIFIC SUGGESTIONS

(1) Review your contracts in the light of current conditions. If you are using the same contract used in 1925, or even in 1946, changes are indicated.

(2) Eliminate those contract provisions which you do not enforce and practice. Remember, a contract with a bark that is worse than its bite may be costing you in grower relations, what you think you are gaining in a delusive certainty.

(3) If you undertake to revise your contract, don't consider it a task for lawyers and lawyers alone. Ominous sounding legal provisions which are more threatening than useful are usually the product of a lawyer's instinct for maximum protection. Keep an eye on the big picture. Avoid letting isolated incidents in the past history of your company give you an exaggerated sense of the importance of little specifics covering only remote possibilities.

(4) Make a definite effort to keep your contracts readable. Leave out such phrases as "to wit" and "party of the first part", etc. Designate the grower as the "grower" and the canner as the "canner" or "processor".

(5) Don't abuse the use of penalty clauses. Insure yourself realistically of their need.

(6) Minimize the use of "options". A tone can be created in a contract document which makes it appear considerably less reasonable that it actually is—to growers, to your courts, and to governmental authority. Make it read this way, for instance, "Deliveries will be accepted only between the hours of 9:00 to 5:00 on week days, unless the canner and grower mutually agree on deliveries outside of these hours." Instead of, "Canner may, at his option, reject deliveries on Saturdays, and Sundays or after five o'clock on weekdays."

Frequently the exercise of the option creates an antagonism among individual growers which may in the long run outweigh the benefits accruing to the canner.

(7) Accord whenever possible a reciprocal right to the right assumed by the canner. It is particularly pointless to fail to do this when the compensating grower privilege is recognized by the canner in practice. Don't let the historical development of canning industry crop contracts prevent you from expressing on the face of your contract the accepted fact that your contract is a two-way street. Let your contracts give expression to these grower gains.

A cynical politician once observed that, in the agricultural field, one of the surpluses which has given us the most trouble has been that of farm leaders. Contracts expressing the true benefits of the canner-grower relationship, can substantially contribute to the solution of any problems emanating from that source.

DR. HOWARD L. STIER, Director
Division of Statistics
National Canners Association

EFFECTIVE AND ACCURATE PRESENTATION OF CROP STATISTICS TO GROWERS

From an Address by
H. L. STIER
Director of Statistics, N.C.A.

Businessmen and farmers are relying more and more upon facts from figures as a basis for their plans and decisions. Many canners say that canning crop producers are more conscious of the value and need for statistical facts than the average farmer. Many canners have been of real help to their growers by providing them with useful basic statistics. In other instances canners have not recognized any responsibility in this field.

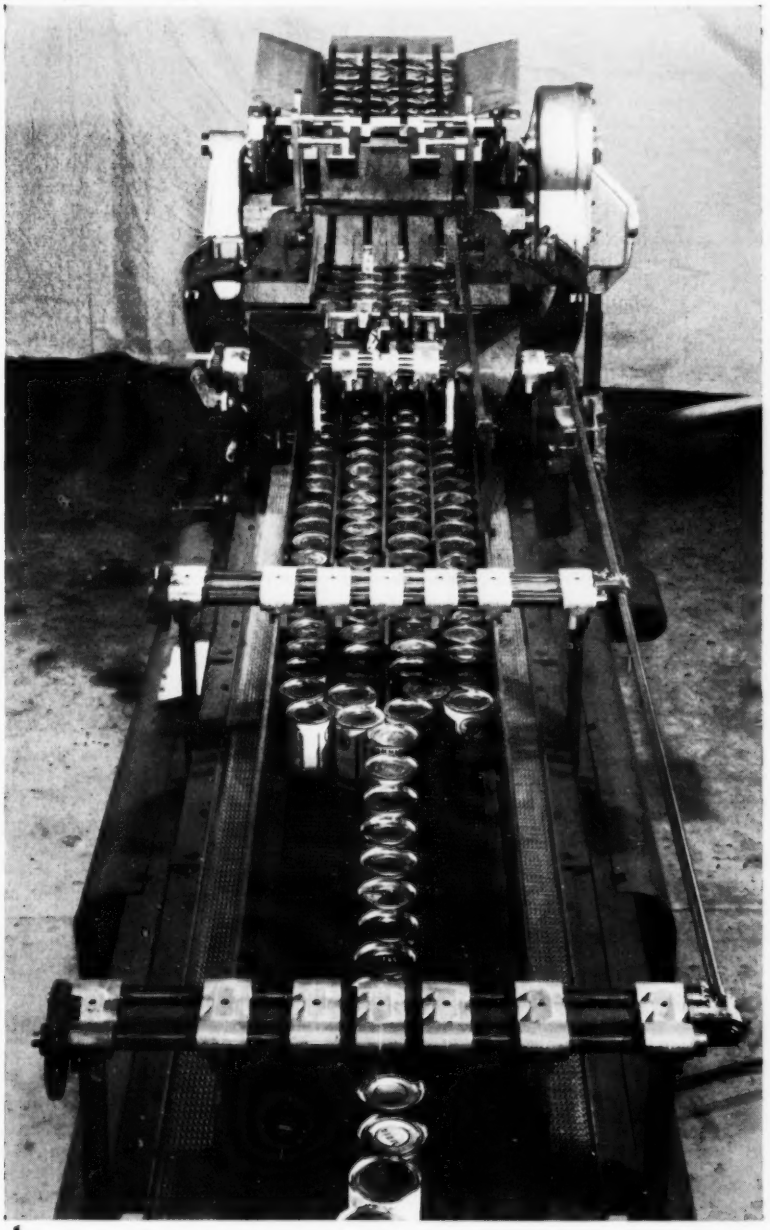
By summarizing individual grower records and making them available to growers together with other production data for the state and the U. S., the canner provides the starting point for the improvement of individual grower performance. The net result will be greater monetary return to the grower, and the canner will receive a higher quality product.

PRESENTATION

The presentation of crop statistics to growers by canners can be classified under two broad headings: (1) State and regional data which deal with crop acreage, production, yields, price per ton and total value, and (2) local crop data which deal with crop yields on a county or grower basis, production costs for the area, return per acre or ton, relative quality produced by individual growers and experimental data giving the results of experiments in the use of pesticides, fertilizers, various cultural practices, etc.

VERTICAL PACKING

Since I've seen the UNIVERSAL Case Packer at the convention, my worries are over! It's Gentle!



- ★ **Will Pack 30 Different Sizes of Cans.**
- ★ **Up to 600 Cans per minute.**
- ★ **Quick Change in Minutes**
- ★ **Can Sizes**

  Diameters: 202 to 603

  Two Layer—
  Heights up to 600
  Single Layer—
  Heights up to 700
- ★ **Case Arrangement**

  4x3, 4x4, 4x5, 4x6, and 2x3.
- ★ **Packs Vertically**

  No rolling cans

  No tearing of labels

  No agitation of contents
- ★ **Straight Line Production**

Maryland Engineering Company
Box 500
Randallstown, (Baltimore) Maryland

Write or Phone for Details:
OLfield 3-3939

Much, if not most, of the data included in the local series of crop statistics must come from individual canners or grower records. The state and national data are contained in the reports published by the Crop Reporting Service of the U. S. Department of Agriculture.

PREPARATION

In preparing statistical data for presentation there are two cardinal principles that should be followed: (1) simplify the presentation as much as possible and (2) make sure that the data are complete and accurate. Presenting statistics in chart form facilitates their use and aids in their interpretation. Relationships and trends can be seen readily in a chart which would require much study if the same data were in tabular form. However, the value of a chart is very frequently lost by adding too many factors in the chart and making it too complex. A good rule to follow is to try to make one point in each chart. Whenever possible color should be added to statistical charts. Its proper use greatly increases their effectiveness. In reports to growers and in fieldmen's handbooks it is usually desirable to include the basic data in tabular form and to chart these data whenever possible on the same page or the opposite page. The user then can refer to either the actual values in the table or use the chart to quickly ascertain the relationships and trends that exist.

There are available many inexpensive methods of preparing charts. Some of the most effective statistical charts can be made from very inexpensive materials and equipment. The most important factor is ingenuity and the desire to be accurate and effective in presentation. Color can be very effectively used in charts by the use of such commonplace items as colored Scotch tape or colored crayons for bars or lines. Modern methods of duplicating make possible relatively inexpensive duplication of charts in color. Actually color charts can frequently be reproduced at lower cost than printed matter (by letter press).

If a little forethought and care is taken in the initial preparation of charts so that their dimensions will fit the window space in 2 by 2 slide, (35 mm film) then almost any person who is handy with a camera can make very effective color slides of the charts for use in meetings. For such use charts should be made in the proportions of approximately 9" x 13". This technique provides charts in color that can be projected to almost any size desired at a cost that is very nominal.

Agricultural Management Problems

PRESIDING: Mark H. Mitchell, The Larsen Company

The Second Raw Products Conference held on Sunday afternoon, had to do with agricultural management problems. Mark H. Mitchell of The Larsen Company, Green Bay, Wisconsin, presided at this session. It began with a panel discussion on the value from a company standpoint of a soil testing program and field demonstration in securing higher yields and higher quality canning crops. John G. Martland of the Green Giant Company, Le Sueur, Minnesota led the discussion, Panel members included Frank App of Seabrook Farms Company, Bridgeton, New Jersey; Ben F. Counter, Fort Lupton Canning Company, Fort Lupton, Colorado; Eldrow Reeve, Campbell Soup Company, Cicago; and M. E. Schelihardt of Stokely-Van Camp, Hoopeston, Illinois.

HOW THE TECHNICAL ADVISORY COMMITTEE OF NCA IS TRYING TO SOLVE SOME OF OUR FIELD PROBLEMS

From an Address by

A. C. MOLL

Chairman, Raw Products Technical Advisory Committee

The Technical Advisory Committee is now working on five projects directly related to field and raw products problems of the canning industry. TAC does not provide financial sponsorship for research, believing that there already exists a great wealth of potential research activity in State and Federal Research agencies, and in related commercial interests. Also, within our own industry, numerous companies maintain Agricultural Research and Development programs for their own purposes. Many problems of an industry-wide nature do not lend themselves to solution by these individual companies, but are the kind which can be effectively undertaken by the combined industry group. The membership of the TAC consists of men who are in agricultural research, or in raw products management positions in the industry.

Five sub-committees of the Technical Advisory Committee are active on these projects and will follow their particular project to completion. This type of organization, and the "project" approach to the study of crop problems, insures intensive and continued pressure on those who are cooperators with the industry on these projects.

The TAC actively cooperated with the New York State Canners and Freezers Association and the manufacturer of the mechanical bean picker in the development of agronomic performance specifications and the evaluation of machine performance. In its cooperation with the manufacturers, the TAC assumes no responsibility other than the "agronomic evaluation" of the equipment and the definition of industry needs so that the developers can be guided accordingly.

As a part of the work with the bean picker, the TAC developed specifications for the use of bean breeders in developing new varieties required by the picker, including quality and varietal type definitions. It also met with snap bean breeders for the interpretation of industry requirements. This has given breeders a clearly defined objective, backed by industry status, so that breeding goals can be set with reasonable confidence.

ORIGIN OF PROJECTS

How do committee projects originate, is a natural question. Many TAC projects originate within the committee, expressing needs for research and development on industry-wide problems which have not been solved and which are too extensive to be solved by individual canning companies without the cooperation of the related industries also concerned.

CURRENT PROJECTS

(1) SEED PERFORMANCE — To discover the performance of individual seeds when planted for the development of the individual plant from the seed as affected by plant spacing, plant population, cultural and fertility conditions, soil types and moisture supply.

Enthusiastic cooperation has been established with a committee from the Seed Trade for the cooperative study of the measurement of seed vigor and individual seed and plant performance. Research has been conducted for the past two years, but more work needs to be done. U.S.D.A. Research officials have inaugurated a new project in pea seed quality research at Beltsville. A sound foundation for ultimate improvement of seed and even more important, the effective use of that superior seed has been developed.

(2) PRECISION PLANTING — TAC has approached the farm equipment industry through the Farm Equipment Institute asking for seeding equipment which will place seed in the soil in exact positions. Present drills and planters will not do that. Two major farm equipment manufacturers have developed, built and placed in the hands of the TAC several research models of precision planters for field tests in 1954. More tests in 1955 with plans to obtain active participation of state association Raw Product Committees in supervising these tests. Wisconsin has already appropriated funds for three years of experiment station

research in plant spacing, populations, etc., utilizing these experimental planters.

(3) INSECT AND DISEASE CONTROL EQUIPMENT—Basic research in coverage and application methods necessary before progress can be expected from the makers of spraying equipment for row crops. Research groups in New York and Ohio and the USDA at Toledo are at work on this project with the cooperation of the state canning associations. New York Association has provided financial sponsorship and new equipment has been built. USDA's conducting tests in Florida with air blast spraying of tomatoes this winter. Other experiment stations have shown interest.

(4) MOBILE VINING — Services of the committee have been made available to all viner manufacturers. Developmental models of one manufacturer have been tested. The results—several mobile machines will be in the field-test stage this season.

(5) FRUIT PROBLEMS—Youngest of all projects the Fruit Problems Sub Committee proposes to provide cooperation with state association groups in developing suitable recognition of processor's interest in fruit crop research. As a preliminary the Raw Products Research Bureau has made a survey of fruit crop research projects in the United States. Already problems have been noted as worthy of special attention.

TAC reports to the Raw Products Committee which is responsible for policy. That committee has adopted a resolution encouraging appointment by state canners and freezers associations of active raw product committees.

HOW GREATER UTILIZATION OF WEATHER INFORMATION CAN PAY OFF TO FARMERS AND CANNERS

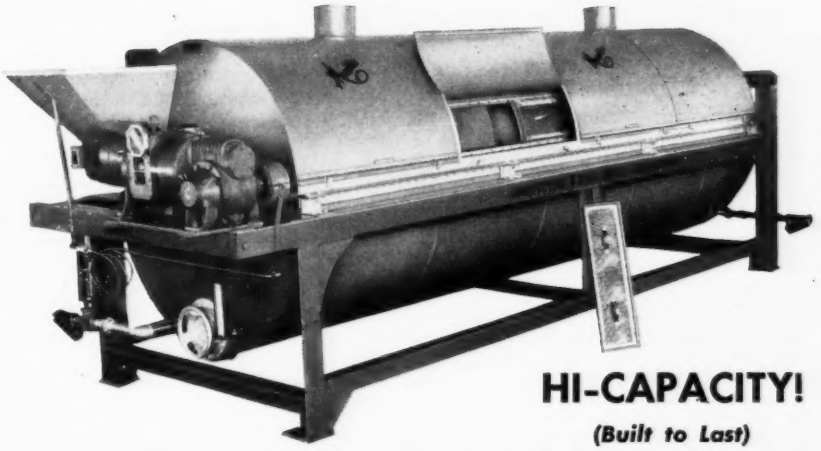
From an Address by
JAMES M. BEALL
Agricultural Meteorologist
Weather Bureau
Department of Commerce

The Weather Bureau is performing certain specific services for agriculture now. It has fruit-frost warning service for Florida and California citrus, for apples in Oregon, Washington, and Idaho, for cranberries in Wisconsin and Massachusetts. There are other local services: Forecast for maple sap runs, orchard spray forecasts, cotton spray forecasts, dew and wind forecasts for aerial applicators, tobacco curing forecasts, frost warnings for alfalfa seed growers, lambing forecasts in western areas, hay drying forecasts, etc.

The Bureau hopes to do more. Two years ago the job was sized up in three phases: (1) Find out what the farmers' requirements are, (2) Plan a program designed to meet these requirements, and (3) do it.

The bureau found that the farmer wants weather information as far in ad-

Monitor
REGISTERED TRADE-MARK



HI-CAPACITY!
(Built to Last)

SANITARY BLANCHERS

IMPROVED MODELS FEATURE-

A. *SANITATION CONTROL!* NOW ASSURED with EASY-*CLEANOUTS* Etc.

B. New "SPIRALATOR-TYPE" Discharge.

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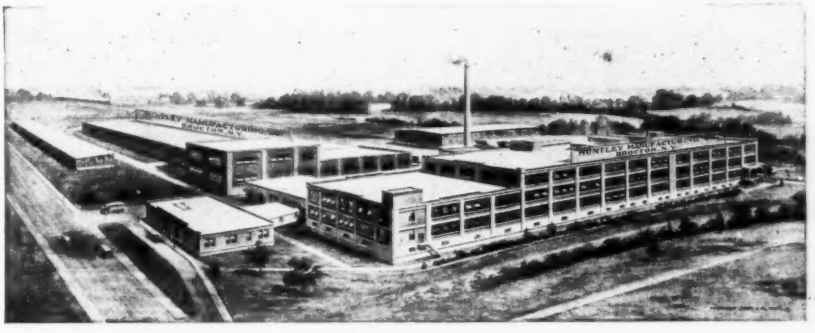

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vance as possible for his farm at the right time of day and in language that he can understand. The bureau is in phase two now developing plans to implement this requirement and it has started on some of phase three.

Probably the biggest single thing accomplished was the institution of the third day agricultural outlook last year. This year the bureau hopes to get out a five day forecast on Monday, Wednesday and Friday. For strategic purposes the bureau would like to have a season forecast. Some are attempting this type of forecast now. The bureau will not do so until skills get better than they are now. Using climatological information, however, is better than guessing. Men of Iowa State, for instance, consulted with the bureau and information was coordinated on the probabilities of how many years during the normal hay drying season three good days of drying weather in a row could be expected out of ten years. The answer was so discouraging that Iowa State College has recommended that the first cutting be put up as grass silage or be mow cured.

Similarly, the packer and canner who schedules his production based on the average weather records will have a lower cost per unit than the canner who schedules his production by guess and by God. And finally, the farmer who purchases his supplemental irrigation equipment on the basis of the probabilities of rainfall in his area will know exactly how many years it will take to write off his equipment whereas the farmer who purchases this type of equipment without thoroughly investigating the cost benefit ratio may find himself with a white elephant on his hands.

TACTICAL PLANNING

For tactical planning the weather bureau issues monthly outlooks around the first and 15th of each month. While these are not as good as the bureau would like, they are better than the climatological averages, better than flipping a coin.

Another type of tactical planning information is the 5 day forecast. These show considerably more skill than the monthly outlook. The Bureau is hopeful that funds will become available to increase the number of 5 day forecasts a week. At the present time they are issued twice a week on Tuesday and Friday mornings.

COMMUNICATIONS

The Weather Bureau hopes in the future to be in position to release forecasts with an eye to the specific problems of farmers in a given area. In other words, in addition to giving temperatures, wind directions, expected moisture, sunshine, etc., to be able to say, for instance, that hay drying conditions will be ideal, etc.; to be able to tell the farmer what to do in terms of the expected weather conditions.

mutual understanding of problems and the position that each must take.

Assuming then that Mr. Smith, the grower, has available to him several suitable pesticides that have been produced and evaluated by industry, label accepted for specific uses by agencies of government, and a spray schedule based on experience from research and extension data within his growing area, what problem remains?

It seems to me that the processing firm contracting for Mr. Smith's crops should work out a definite understanding with him, through its field men, as to what spray program is to be followed and such limitations as the firm may find it necessary to place on the use of particular pesticides. It will always be true that certain new chemicals, although pesticidally effective, may have some restriction in use on processing crops due to established procedures at the factory for checking residue levels on raw products or company policy on their use, due to lack of sufficient experience on quality of the processed commodity, and the like. Whatever limitations may be advanced, the grower and the processor should be in agreement ahead of the season, and any changes in policy during the season should be discussed before there are changes in the spray schedule.

Growers must be encouraged constantly to use only those pesticides which have been label accepted for use on the commodities to be treated.

Growers must be encouraged to follow directions for safe use and not to "double-up" on dosage or apply later in the season than recommended.

It then becomes a responsibility of the grower to do his job well.

PROCESSOR SHOULD CHECK RESIDUES ON ITS RAW PRODUCTS

Many of the major processors are checking residue levels on commodities at harvest that have been treated with pesticides during their production. This procedure is a necessary part of quality control and affords the industry with definite information to guide its operations. With inspection of processed foods as a routine operation, it will be of increasing importance for the laboratories of the food processors to make residue analyses a definite part of their program, just as the field operations will make supervision of spray schedules a part of theirs.

JOINT RAW PROD.-LAB. SESSION

Monday February 21

PRESIDING: C. H. Mahoney, Director, Raw Products Research, N.C.A.

Pesticide Tolerances

HOW PESTICIDE TOLERANCES MAY AFFECT THE PROCUREMENT OF RAW PRODUCTS

Summary of Remarks by

DR. CHARLES E. PALM
Department of Entomology
Cornell University

The Miller Act, also known as Section 408 of the Food, Drug, and Cosmetic Act of 1938, provides the consumer, the processor, the grower, research and extension workers of government and industry, with definite guidance on pesticide residues. Furthermore, it appears to offer a workable procedure to get prompt establishment of, or exemption from, tolerances for new pesticides once they have undergone the necessary program of evaluation.

With "guideposts" up, the responsibility for avoiding trouble with pesticide residues lies with the grower, the research and extension services of government and industry, and the food processors. Effective pest control programs can be conducted and the treated commodities stay within the tolerance limits.

We need experience with the specific pesticides in the various areas, and on the several crops for which they may be recommended. Climatic conditions vary, seasonal conditions fluctuate. We need careful experimental work to provide the extension service with a basis for field evaluation of the pesticide in each area of recommended use. Perhaps it is a "double-check," but nevertheless, an important one. Florida growing conditions are different from those in New York, or Wisconsin, or Oregon. It pays to know the story on performance and residues at harvest before recommending a pesticide in a schedule for growers to follow. To fulfill this phase of the responsibility, state, federal and industrial experiment stations, alone or in cooperation with each other, must continue their close relationships in research and extension. And equally important, these agencies must continue a close liaison with the food processing industries to insure a

PURIFICATION OF PLANT MATERIAL AND SEPARATION OF INSECTICIDES FOR BIOASSAY

From Panel Presentation by

W. M. HOSKINS
Dept. of Entomology and Parasitology,
University of California, Berkeley

The use of living organisms, in some cases higher animals, has been established practice for standardizing drugs, vitamins, and various plant and animal products for a long time. We decided to use houseflies and began a study of the best method for exposing them to an extract of the contaminated material.

DETAILS OF METHOD

The following is a description of the extraction, purification and bioassay as now practiced in our laboratory.

Extraction—A convenient amount of sample, but not less than 1000 grams, chosen as randomly as circumstances permit, is finely subdivided in a food chopper or other convenient appliance and transferred quantitatively to a gallon jar which can be sealed tightly. One thousand ml solvent and an equal volume of 95 percent alcohol are added and the jar is rolled or shaken mechanically for an hour. In case of very wet samples enough anhydrous sodium sulfate is added to tie up most of the water so that a single liquid phase is formed. After shaking is finished, the liquid is poured into a large separatory funnel, diluted with two liters of water and shaken vigorously for a short time. The aqueous phase which separates is withdrawn and a second portion of water is added and the separation repeated. The organic phase remaining is the recovered solvent. Its volume is measured and the assumption, checked by experiment, is made that the contaminating insecticide from the sample is uniformly distributed between the recovered and nonrecovered solvent. With the proportions mentioned, 1 ml solvent represents 1 gram sample and any aliquot volume used for analysis stands in the same relation.

If the level of residue is entirely unknown, 50 ml recovered extract are evaporated in a small beaker to about 5 ml in a warm air stream. About 5 grams clean white sand are added and evaporation continued until the solvent appears to be gone. The remaining extractives plus the toxicant will be distributed over the surface of the grains of sand. Six ml pure acetonitrile are added and the mixture is raised to the boiling point, carefully avoiding local overheating. Four ml water are added and the resulting solution is cooled and added to the wax column which has been flushed with 60 percent acetonitrile. The sand is rinsed with two 5 ml portions of hot 60 percent acetonitrile which are added to the column as before.

Purification — When the concentrated extract has just settled into the top granules of the column (a low air pressure may be used to hasten this process, but avoid pushing the liquid below the top of the column), 250 ml of developing eluent are added. This is 60 percent acetonitrile unless there is reason to make a run with 40 percent to separate out certain toxicants. Liquid should flow from the column not faster than 1 ml per minute. Usually a 150 ml portion is taken. This is shaken in a separatory funnel with 250 ml water and two successive 100 ml volumes of petroleum ether. These are combined and aliquots taken for bioassay.

Bioassay—This depends upon the relation between two dosage-mortality lines. The first is obtained by exposing flies to a series of known amounts of toxicants, either in a pure state or recovered from a sample of the same kind of produce as that analyzed. The other line expresses the mortalities of flies exposed to a series of volumes of purified extract from the sample. The data for each are plotted on log dosage-probit paper and straight lines should be obtained, at least over the 10 to 90 percent mortality range. Data in the middle range of mortality are especially significant. The lines should be parallel and any wide departure from this condition gives reason to suspect an error.

From the known doses an LD_{50} is read in terms of micrograms of toxicant per vial and from the extract LD_{50} is obtained in terms of mls of purified extract. Since this was made so 1 ml corresponds to 1 gram sample, the LD_{50} in mls is interpreted as the grams of sample which

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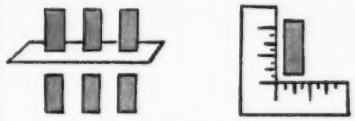

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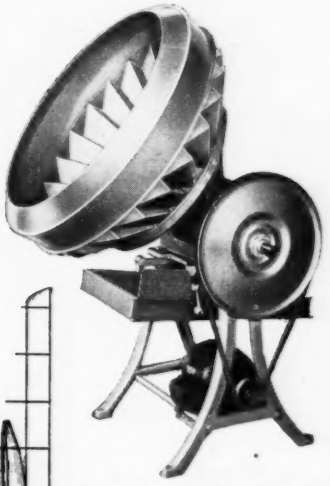

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contain an amount of toxicant that kills half the flies, i.e., the LD_{50} of the line for known amounts. Dividing the LD_{50} in micrograms by the LD_{50} in grams of sample gives the contamination in ppm directly. Of course, the calculation may be made through the actual amount of toxicant per ml of purified extract and if the ration of sample weight to extract volume is not unity, this more roundabout way must be used. For more details concerning the bioassay techniques, reference may be made to the earlier article by Hoskins, Witt & Erwin (1) and to a forthcoming one by Erwin, Schiller & Hoskins (in press, 1955).

(1) Hoskins, Witt and Erwin, *Analytical Chemistry* 24, 555-60, 1952

DEVELOPMENT OF A SIMPLIFIED BIOASSAY PROCEDURE FOR DETERMINING INSECTICIDE RESIDUES IN RAW AND CANNED PRODUCTS

From an Address by

F. C. LAMB

Western Branch Laboratory, N.C.A., Berkeley

The bioassay technic developed by Dr. Hoskins and his co-workers has proved to be a useful research tool and has been applied successfully to a number of different products and insecticides. A list of these products with the insecticides that they have been tested for is shown in Table I.

The method was not designed, however, for the routine analysis of large numbers of samples where speed and simplicity of operation are prime requisites, and the highest degree of accuracy and sensitivity may not be required. Our Laboratory has investigated this method with a view toward reducing it to the essentials of a satisfactory control method. Factors which may lead to difficulty in its practical application were also investigated.

The principal change in the Hoskins procedure was a simplification of the method of exposure of the flies to the insecticide and the subsequent holding of the flies after exposure. In the original procedure the flies are anesthetized and then exposed to the insecticide in small vials, after which they are transferred to cages for the 24-hour holding period. In the simplified procedure flies are exposed directly to the insecticide and held without transfer in 250 ml beakers covered with cheesecloth. The insecticide is coated on the bottom of the beaker by allowing a solvent solution of the sample to evaporate in the beaker.

Since the major effort spent during the last year was in method development, the number of results obtained on the analysis of actual samples is limited. A number of insecticides including DDT, perthane, dieldrin, aldrin, lindane, parathion and malathion were bioassayed and LD_{50}'s obtained. These compared quite favorably with results obtained with the Hoskins method. Recovery tests were run on dieldrin and perthane in tomatoes and DDT and dieldrin in apples, and recoveries within 20 percent of the amount added were obtained. As previously indicated, poor recoveries were obtained in certain instances, but these were traced to the purification rather than the bioassay procedure itself.

APPLICATIONS OF BIOASSAY

The equipment required for routine bioassay work are a chemistry laboratory containing a fume hood and other items of basic equipment and supplies, an isolated room away from the canning area for raising flies which can be maintained at a reasonably constant temperature, and special equipment for handling the flies, consisting of jars and cages, carbon dioxide for anesthesia, special food for larvae, etc.

The extraction and purification should preferably be performed by or under the supervision of a trained chemist. The bioassay can be performed by a person with a minimum amount of training but possessing a special aptitude for this type of work.

The suggestion is made that it might prove to be more economical when several canneries in fairly close proximity to each other are running residue determinations to establish a central laboratory where all of the bioassay work can be performed. By this means only a single fly colony need be maintained and the laboratory could be set up in some isolated spot free from contamination with insecticides. This laboratory would have to be assured of a steady supply of samples over a predetermined time in order to justify its operation.

In evaluating the manpower requirements of the bioassay procedure consideration must be given to the type of results that are needed. If quantitative results are required, considerably more time and effort must be expended than if only screening results are required. In general, the time is no greater, and is probably less than would be required for a chemical estimation.

TABLE I—LIST OF PRODUCTS AND INSECTICIDES WHICH HAVE BEEN BIOASSAYED SUCCESSFULLY USING THE HOSKINS PROCEDURE

Product	Raw	Canned
Vegetables:		
Green beans	———	Aldrin, toxaphene
Kidney beans (dried)	Aldrin, dieldrin	———
Lima beans	———	Dieldrin
Carrots	BHC, lindane, aldrin, dieldrin, heptachlor, chlordane, DDT, isodrin	BHC, lindane, aldrin, chlordane, DDT
Sweet corn (vacuum packed and cream style)	———	Endrin, aldrin, dieldrin
Cucumbers	Lindane	———
Peas	———	Dieldrin
Sweet potatoes	BHC, lindane, isodrin, heptachlor, aldrin, dieldrin, endrin	BHC, lindane, chlordane
White potatoes	BHC, lindane, heptachlor, chlordane, endrin	———
Sauerkraut	———	Dieldrin, endrin
Spinach	Aldrin, dieldrin, parathion	Aldrin, dieldrin, isodrin, endrin, parathion
Tomatoes	Aldrin, dieldrin, perthane, DDT, lindane	Aldrin, dieldrin, lindane, perthane (juice)
Fruits:		
Apples and applesauce	DDT, dieldrin	———
Olives and olive oil	———	Lindane [1]
Peaches	———	Diazinon
Pears	———	Diazinon
Prunes	———	(strained) DDT
Meat:		
Beef (fat, liver, heart, lean meat, kidney and brain)	———	Endrin

[1] Requires a preliminary separation with acetronitrile, sensitive to about 0.2 ppm.

INSECTICIDE RESIDUE DETERMINATION USING THE HOSKINS PURIFICATION PROCEDURE AND LAUG HOUSEFLY BIOASSAY METHOD

From an Address by

C. J. TRESSLER and T. H. JENKINS

Washington Research Laboratory, N.C.A.

For several years the N.C.A. Washington Research Laboratory has been working with the housefly bioassay method for insecticide residues in an effort to determine its possible value as a routine quality control method. After assuring ourselves that the techniques of the method itself had been brought to a workable point, and that the maintenance of a fly colony is not too difficult, we wished to apply the method under practical operating conditions.

A program was undertaken in which canned food products or solvent solutions of insecticides, extracted from foods under factory conditions, were analyzed for residues. For comparison purposes, determinations were made by fly bioassay and by chemical methods.

The Gerber Products Company in cooperation with the Michigan Experiment Station set up special field plots of spinach which were sprayed with four insecticides and harvests were made 1 day and again 7 days after last application. Sprays were applied on May 13, 19, June 1 and 14 as tabulated below:

Insecticide	Concentration (percent)	Application rate (pounds per acre)
Parathion	15	1.0
Lindane	25	1.0
DDT	75	1.33
Malathion	25	3.0
none (control)	—	——

The insecticides selected for the tests were chosen from those with which considerable bioassay experience had been had, rather than on their specific usefulness for the test crop.

The harvested spinach was sampled and stripped of insecticides, using technical hexane, in the Gerber Company laboratories. A portion of each lot of spinach was then canned as a puree. The hexane solutions and the canned samples were shipped to Washington for analysis.

The Beech-Nut Packing Company prepared and shipped for bioassay aliquots of pentane extracts of fresh foods from those made for chemical residue analyses in their own laboratories. Included were residue extractions from samples of spinach, green beans, celery and one lot of peaches. These represented commercial lots of products received at the factory and, in certain cases, represented products rejected for canning because of excessive residues.

Chemical analyses were performed using the following methods:

Insecticide	Method
Parathion	Averell-Norris (3)
Lindane	Schechter-Hornstein (4)
DDT	Schechter-Haller (5)
Malathion	Norris-Vail-Averell (6)
Chlordane	Phillips-DeBenedictis (7)
Toxaphene	Phillips-DeBenedictis (7)

For lindane and DDT chemical tests, purification of extracts were made using the Davidow fuming sulfuric acide on Selite column technique (8). Additional determinations of the DDT samples were also made in which purification was performed by eluting residues in benzene through alumina (3 volumes) mixed with Attaclay (1 volume). The last technique partitioned DDT from spinach extract as well as did the Davidow method and is faster and simpler to perform.

CONCLUSIONS

Analyses of four food products were conducted, involving residues of six insecticides, by fly bioassay for comparison with results by chemical analyses.

Good agreement, in general, was found between results by the two types of analyses.

Poor agreement was obtained with certain samples between dioassay and chemically determined results. These included some of the spinach samples to which DDT or malathion had been applied and one series of celery samples treated with toxaphene. No explanation has been found for the lack of agreement in these particular cases.

Heat processing of spinach has an effect on malathion which leaves a material toxic to flies but not detectable by the chemical method.

The bioassay procedure was found to be simpler and easier to use than the chemical methods, particularly in that only one basic procedure is involved.

The bioassay method was found to be more sensitive than the chemical methods used, except in the case of toxaphene where 0.5 ppm is needed for detection by bioassay of 20 gram samples as against about 0.05 ppm by the total chlorine method.

A study of the results indicates that the over-all estimation of toxicity in a food by bioassay is fairly accurate. Accuracy, as measured by percent recovery of DDT and malathion added to unprocessed spinach, was less by bioassay than by chemical methods. After processing, the situation for DDT was about the same, but for malathion the chemical method could not be relied upon to detect a residue quite toxic to flies.

In terms of residue analyses on a quality control basis, the fly bioassay procedure offers a sensitive tool which can be relied upon to give a reasonably accurate estimation of insecticide residues present. The same basic method can be applied to numerous foods and can be relied upon to detect any of a long list of pesticides.

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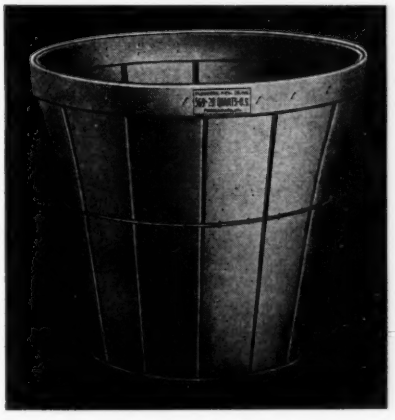

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EFFECT OF APPLIED PESTICIDES ON FLAVOR CHANGES IN CANNED FOODS

From an Address by

ELLY HINREINER
University of California, Davis

Since the first recognition that certain applications of benzene hexachloride are capable of undesirably influencing the flavor of treated food crops, a vast amount of effort has been poured into attempts to determine which of the newer-type organic pesticides are apt to cause flavor changes, under what conditions of use, and whether these changes are of practical importance to the consumer. The problem has proved to be an extremely complex one, and as yet we have only empirical means for solving it. So many variables—not only crop and dosage level, but also time of application, type of soil, climate, irrigation practices, processing, storage, and, of course, the acuity of the particular human who tastes it — are involved in deciding whether a given pesticide will or will not give rise to objectional flavor changes, that it is a hopeless task to test all of the factors experimentally. Nevertheless, a very large amount of experience has accumulated, and it is becoming possible in the case of many of the important new pesticides to make intelligent guesses about the suitability of their use in a given situation as far as flavor effect is concerned.

The information in this survey of the pesticides is a compilation of the work of many food technologists in laboratories throughout the country. It should be remembered in considering the almost bewildering array of data, that the techniques used in taste-testing in the different laboratories vary considerably, and it is probably impossible to give the same sort of interpretation to all of the information, or even to reduce all of the data to the same basis. When the other aforementioned variables of soil type, climate, etc. are superimposed, it is not too hard to understand why occasionally the results appear to be contradictory. It is probably best to look at the general tendency of a pesticide to cause flavor difficulties, as revealed by a large number of different experiments, rather than at the results of any one particular experiment by itself.

TEST RESULTS

Benzene Hexachloride — Lindane — Little doubt about the tendency of this compound to produce undesirably musty or moldy flavors in food crops. With dosage as low as a half pound per acre, *canned* carrots and sweet potatoes show decided off-flavors though the effect on *fresh* vegetables is not so severe. Lindane at a half to 1 pound per acre does not seem to cause flavor differences in *fresh* vegetables to the same extent as technical BHC, but frequently creates flavor problems when these same vegetables are *canned.* Apparently the heat involved in processing causes changes which intensify development of off-flavors.

Peaches from trees sprayed with BHC were more apt to show off-flavors when canned than when fresh or frozen, and when stored a long time than when tasted shortly after processing.

In taste tests on fresh, frozen, canned and jammed strawberries treated with 2 and 4 pounds per acre of lindane, only the canned and jammed berries showed off-flavors that were of possible statistical significance. Higher dosage levels, such as 3 and 8 pounds per acre of lindane almost invariably adversely affected the flavor of canned vegetable crops, however.

Flavor tests have been made of a number of frozen vegetables (canned onions and tomatoes) grown one, two, and three years after treatment of the soils with one-half pound per acre and with 15 pounds per acre of BHC as well as with various dosages of lindane, chlordane, and DDT. Although there was some variability from crop to crop, both dosage levels resulted in flavor differences (from the controls) in most of the vegetables over all three years.

DDT — Usually considered free from effect on flavor, and little testing has been done on it.

Aldrin and Dieldrin Isodrin and Endrin—These have been the subjects of a great many flavor investigations. The majority of food crops treated with aldrin and dieldrin appeared to show no flavor differences from untreated checks even at dosage levels up to 10 or 12 pounds per acre when used as a soil treatment. There are, however, some isolated instances of off-flavor.

Chlordane or Heptachlor—Reports of off-flavors resulting from use of these two pesticides at dosage rates of 10 pounds per acre or less are unusual, and even where differences are found the flavor of the treated material is not necessarily undesirable.

Toxaphene — In tests involving 24 pounds per acre soil treatment and 6 pounds per acre foliage treatment on various canned vegetables, significant flavor differences were found with the soil-treated pumpkin and the foilage-treated sauerkraut, but none with any of four other vegetables tested. No flavor effect of toxaphene on sweet potatoes or peanuts even at dosage rates of 25 and 31 pounds per acre. On the other hand, spraying with 25 percent toxaphene resulted in canned potatoes having a less desirable flavor, though leaving canned tomatoes and lima beans unaffected.

Sulfonates and related sulfur *derivaties including ovotran, genite-923, sulfenone, and aramite applied as miticide sprays*—Applied on pear trees in the 1952 season, at the University of California, all four of the treated samples in 1952 were significantly different from, and less desirable than, the controls when tasted as canned fruit. Repetition of the experiment in the following season gave rather different results. Although one or two of the tests indicated possible flavor problems, none of these four pesticides resulted in serious differences.

Peaches and apples sprayed with the same miticides in 1953 resulted in more apparent differences. Ovotran and sulfenone did not appear to have any adverse effect on flavor, but fairly serious off-flavors were detected in the canned genite-treated peaches and applesauce, and there was a possible flavor problem in the aramite-treated peaches.

In 1952 genite-923 and ovotran applications on peach trees at various stages in their growing cycle showed highly significant differences with both miticides. Except in the pre-bloom treatments, there were serious flavor defects.

Genite-923 and aramite applied as dusts to snap beans. Genite treated cooked beans off-flavored when tasted two weeks after treatment. Not significantly different from control after five weeks had elapsed. No apparent flavor differences were caused by the aramite. Severe off-flavors were observed in fresh strawberries sprayed with genite at the rate of 1 quart actual genite per 100 gallons.

Diphenyl carbinol derivatives, chlorobenzilate, dimite, and genite-876—relatively new, have been but little studied for flavor effects.

Malathion and Parathion—Thoroughly investigated. Probably because of their volatility, rarely appear to cause flavor problems in foods. Some possible detection on some canned peas sprayed with a relatively high concentration of malathion only nine days before canning. One group of investigators stated that potato plants sprayed or dusted with parathion produced strongly off-flavor tubers, and that parathion soil applications created more serious flavor problems in potatoes in the second year than in the first year after treatment of the soil.

Systox and OMPA — Investigations started only recently. No flavor effect from use of systox reported on raw cabbage, canned potatoes, potato chips, lima beans, or snap beans, but a 1 percent difference with canned tomato juice. No detection when used as a spray on pears, peaches, and apples except for a slight off-flavor developing in the apples after six months' storage.

CANNING PROBLEMS CONFERENCES

Saturday, Sunday and Monday, February 19, 20, 21

Canning Procedures and Products

PRESIDING: Dr. Randall Royce, American Can Company

THE DETECTION AND CONTROL OF FLAT SOUR ORGANISMS IN CREAM STYLE CORN CANNING EQUIPMENT

From an Address by

A. A. KOPETZ and E. H. RUYLE
American Can Company, Maywood, Ill.

A detailed bacteriological study for foci of infection of flat sour organisms was made on a cream style corn line over a two year period. The incidence of spoilage in incubated line samples was small but consistent and worrisome. As the usual sub-culture methods failed to detect the foci of infection a can sample method not requiring specialized techniques or equipment was tried. This consisted of filling corn samples from several points adong the line into the size can being packed; closing, processing and cooling the can by the commercial procedure; then incubating the can samples at 131° F. As high a percentage of sour cans was found after 4 days as after 14 days incubation, and it is possible that still less time may be employed. This effective procedure, therefore, requires very little additional incubation time over the usual sub-culture methods.

Examination of the can samples from points along the line after incubation at 131° F. showed that the contamination in this instance was localized in the visually clean filler parts.

SUMMARY—RESULTS OF CAN SAMPLING

Sampling Point	No. Cans Incubated	No. Flat Sour Cans	Spoilage Rate C/M
Disintegrator	70	0	0
Batch mixer tanks	319	0	0
Consistency regulator	456	0	0
Top of filler bowl (Canco HO)	444	0	0
Top of filler bowl (Comm.C.M.)	312	1	3.2
Filler nozzles (Canco HO)	443	28	63.2
Filler nozzles (Comm.C.M.)	649	40	61.6

It will be noted that all can samples collected before the filler bowl gave negative results and, except for one instance, only corn which had gone through the filler bowl showed the presence of flat-sour spores.

When it became evident that even the most careful and thorough clean-up procedure, as practiced, would not eradicate the focus of flat sour spore infection in the filler, an attempt at clean-up of this equipment with a caustic solution was made. Since the effect of such a solution on the moving parts of the filler was unknown, it was deemed advisable to approach the use of caustic solution quite cautiously. After thorough cleaning and reassembling of the filler, a hot (approximately 190° F.) caustic-detergent solution was applied. This solution was made up of 3 pounds caustic soda plus 3 pounds detergent per 100 gallons of water.

Upon application of the caustic, the inside of the stainless steel filler bowl began to turn brown. This was surprising, since to all appearances the filler bowl had been thoroughly cleaned. In a few minutes, however, a tough, film-like, discontinuous brown layer having the appearance of a baked-on lacquer coating became evident. This was scrubbed and scraped off by means of sharp knives and plastic mesh scouring pads. The filler was then rinsed very thoroughly with water. Subsequent culture of simi-

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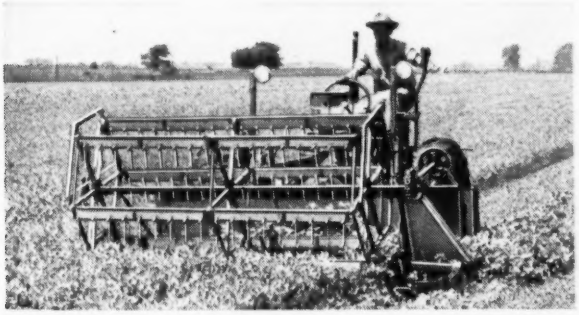

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lar material from another one of the same type fillers used for cream style corn in this plant showed the presence of flat sour spores.

CLEAN-UP PROCEDURE

From the information gained, it was decided to use the caustic clean-up procedure on all cream style corn fillers after each day's run. This procedure was carried out as follows:

(1) Fillers were rinsed thoroughly with hot water.

(2) Fillers were stripped completely.

(3) Following parts were soaked in a tub in a hot caustic-detergent solution for approximately one hour:

Cut-off plates
Pistons
Filler nozzle ports
Floats
Delivery pipes (extension from filler bowl to shut off valves)

(4) Above parts, as well as filler bowls, piston pockets and filler bowl shut off valves were scrubbed with brushes and plastic mesh pads followed by a high pressure water rinse.

(5) Fillers reassembled.

(6) While the machines were running, hot caustic-detergent solution from the blender tank was run into reassembled fillers.

(7) Fillers were rinsed thoroughly with cold water.

On nights when insufficient time was available for the above clean-up, the following alternate procedure was carried out:

(1) Thorough rinsing of fillers.

(2) Cut-off plates removed and cleaned.

(3) Additional rinsing and scrubbing of interior of filler bowls.

(4) Reassembly of fillers.

(5) With fillers operating, hot caustic-detergent solution from the blender was run into the fillers. This operation required only 3 to 5 minutes.

It is interesting to note that out of 30 can sample periods subsequent to the initiation of the caustic clean-up procedure of the fillers, only three periods gave further flat sour spoilage. These three sampling periods were all at the start of the day's run and included the very first corn off the line. In addition, there had been limited time available for clean-up prior to these particular runs, and the abbreviated caustic clean-up was used. Apparently the abbreviated cleaning procedure would start to loosen the tough, clear layer of baked-on corn material in which flat sour spores were harbored. These spore-carrying fragments were then carried through the filler and canned with the cream style corn in the first runs after the cleaning period.

During the period of observation no adverse effect of the caustic treatment on the stainless steel filler parts was evident.

The effectiveness of the caustic clean-up procedure was demonstrated clearly again in the survey carried out during the third season to check on the results being obtained. No flat sour spoilage was encountered in any of the 576 cans collected by the can sample method.

DR. E. J. CAMERON
Director, Research Laboratory
National Canners Association

Experience gained during this investigation has shown that the can sample method can readily be used as a routine control check on the effectiveness of plant sanitation procedures in eliminating thermophilic spores. Also, since no bacteriological media, and little specialized training or equipment is required, the can sample method could be carried out by non-technically trained factory or laboratory personnel.

VENTING REQUIREMENTS FOR VERTICAL AND HORIZONTAL RETORTS USING AUTOMATIC LOADING AND UNLOADING SYSTEMS

From an Address by

D. V. ALSTRAND and B. W. BLAIR
Research and Technical Department
American Can Company, Maywood, Ill.

The problem of removing the air from retorts as a means of obtaining uniform processing temperatures has been the subject of considerable experimental effort. Foremost among these studies were the extensive tests conducted by the N.C.A. Western Branch Laboratory. As a result of these tests a schedule of recommended procedures for venting retorts of various types has been drawn up. These recommendations are contained in the introduction of the N.C.A. Bulletin 26-L (2) *Processes for Low-Acid Canned Foods in Metal Containers.* Canners using the conventional methods of loading retorts are urged to consult the recommendations in Bulletin 26-L (2) for guidance in retort operation.

It should be noted here that the recommendations on retort operation contained in Bulletin 26-L (2) were drawn up prior to the time that automatic retort crate loading and unloading systems were introduced into the canning industry. Thus, these procedures may not apply to the changed conditions introduced by new methods of crate loading. In fact, the Bulletin specifically states that the recommended practices do not apply if any dividers are placed between the layers of cans in a manner so as to restrict the flow of steam throughout the load.

NEW SYSTEMS INTRODUCED

Within the last few years the adoption of automatic methods of loading and unloading canners' retort crates has progressed rapidly. These systems eliminate much of the hand labor required by the older methods and reduce the damage to cans which accompanied these methods of handling. The automatic loading systems with which the work here reported was done, require the use of a divider plate between each tier of cans in the retort basket or car as a means of separating them in the loading and unloading operations. A conventional type of divider plate is constructed of a heavy gauge aluminum plate which is perforated with a series of 1-inch holes on 2-inch centers. The cans are stacked on end as compactly as possible on the divider plates. It is quite obvious that the ends of the cans will cover a large proportion of the holes in the divider plates, a condition which occurs to the greatest extent with the smaller diameter cans. Thus a retort loaded with small diameter cans with a divider sheet between each layer presents virtually a solid block with little open space for the steam to circulate throughout the load.

A number of heat distribution tests conducted by this laboratory at canners' plants have demonstrated that the venting procedures formerly recommended for conventionally loaded retorts are usually not adequate to remove the air pockets from within the retort load when divider plates are used between the layers of cans.

The initial temperature of the product in the cans going into the retort has a considerable effect on the uniformity of heat distribution. The lower the initial temperature, the more difficult it will be to remove the air pockets. A possible explanation for this is that the steam coming in contact with the cold cans near the sides of the retort is condensed before it has a chance to penetrate into the load of cans. As a result longer venting times are required for cans that are filled cold than for those filled at higher temperatures.

The method of introducing the steam into the retort is also a factor in affecting the removal of air pockets from the

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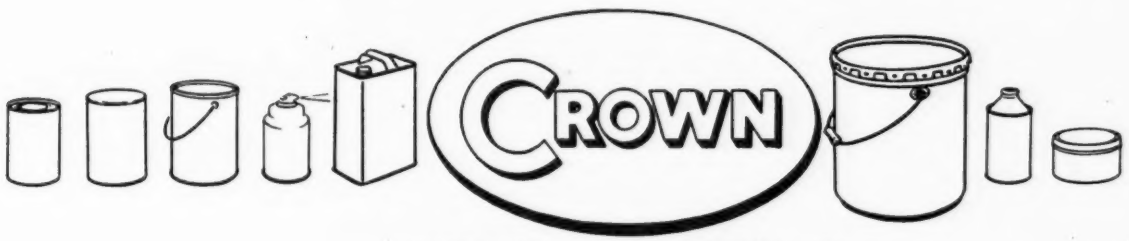

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retorts. For round vertical retorts swirling type steam spreaders have shown an advantage over other types. The steam should preferably be admitted through a by pass line rather than through the controller, and used during the come-up period at the highest pressure available. In utilizing high pressure steam to improve venting results, adequate safety measures should be enforced. All operators should be instructed to give vigilant attention to each retort so that it will be switched over to the controller either at the end of the venting period or when the processing temperature is reached. Retorts should be equipped with safety valves or devices of adequate size so the pressure rise in the retort will not exceed that for which it was constructed.

TEST RESULTS

The venting schedule advocated for conventionally loaded round vertical retorts calls for a minimum venting time of 4 minutes through a 1½ inch gate valve in the overflow line to a temperature of at least 218°F. or 5 minutes to a temperature of at least 215°F. The heat distribution test on one retort installation showed that a four-crate retort loaded with 303 x 406 cans of peas with perforated divider plates between each two tiers of cans required a venting time of 7 to 8 minutes through a 2 inch overflow to a temperature of 240°F. Another four-crate retort installation loaded with 303 x 406 cans of peas using divider plates required venting for a period of 3 minutes through a 2 inch drain to 212°F. plus 5 minutes through a 1½ inch overflow vent and a ¾ inch cover vent to a temperature of 225°F.

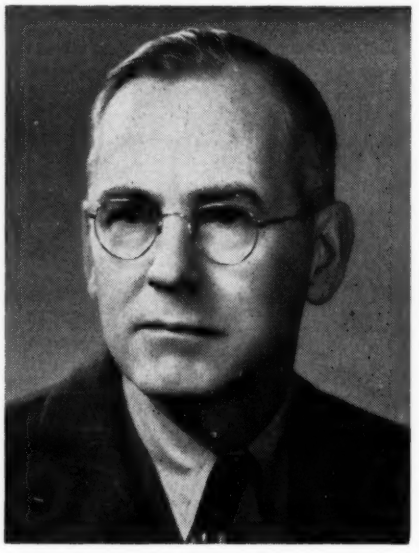
For horizontal retorts over 15 feet in length equipped for venting through a 2 inch top water spreader connected to a 2½ inch gate valve, a venting period of at least 5 minutes to a temperature of at least 225°F. or 7 minutes to a temperature of at least 220°F. has been recommended for retorts loaded by conventional methods. In one test a retort of this type loaded with divider plates between the tiers of cans required venting through a 1 inch blow off to 210°F. plus venting through the 2 inch water spreader for 12 minutes to a temperature of 230°F. to obtain uniform temperature conditions. The product in this case was 211 x 304 cans of peas. The venting schedule for 211 x 304 cans of cream style corn was 4 minutes to a temperature of 225°F. through the water spreader plus the 1 inch blow off to a temperature of 210°F. This last example also illustrates the effect of the higher initial temperature of cream style corn as compared to the lower initial temperature of peas on the venting time required to obtain uniform retort temperatures.

Exhaustive tests have not been undertaken so that venting schedules for retorts loaded using divider plates can be given similar to those now shown in Bulletin 26-L (2) for conventionally loaded retorts. It is suggested that canners changing over to this method of retort loading have their venting schedules checked to determine their adequacy.

RECENT DATA ON THE SODIUM CONTENT OF DIETETIC CANNED FOODS AND THEIR SIGNIFICANCE

From an Address by
FRANKLIN C. BING
Nutrition Consultant, Chicago, Illinois

In the NCA Bulletin entitled, "Dietetic Canned Foods", published in 1953, are reported data on the sodium content of over 350 samples of canned foods. These were experimental packs. The present data were obtained in a study of commercial packs collected during 1953. The project was planned by the NCA Executive Committee and The Can Manufacturers Institute. The Wisconsin Alumni Research Foundation Laboratory at Madison was selected to analyze the sodium content of the samples. Dr. Bing offered comments of the results as an outside consultant.



C. A. GREENLEAF, Assistant Director
Washington Research Laboratory
National Canners Association

THE NATURE OF THE SAMPLES

Not all of the products analyzed were dietetic foods, though all were packed without the addition of sugar or salt. The simple fact that salt is not knowingly added noes not mean necessarily that a canned food is useful for inclusion in low-sodium diets. A product may be naturally unsuited to dietetic use or, in preparation, may be exposed to chance contamination with sodium compounds.

The expression "dietetic foods" has become generally accepted to mean a food which is specially produced for use in therapeutic diets. The expression "dietetic foods" is in reality a convenient way of saying "foods for special dietary purposes." A dietetic food which is sold in interstate commerce is required to be labeled in accordance with the regulations pertaining to foods that purport to be or are represented for special dietary uses. To comply with the federal labeling requirements it is necessary first to have analytical data and other information about each product. Canners of dietetic foods find that it is usually necessary to exercise certain precautions in the selection of raw foods, and in processing methods, in order to control the composition of their dietetic products. When a product is labeled as a dietetic canned food it means that these additional controls over composition have been exercised.

FINDINGS

In general the sodium values were higher in vegetables than they were in fruits. This fact would be expected because data on the natural content of sodium in fruits and in vegetables show that vegetables are higher as a rule in sodium content.

FRUITS—Except for the one instance of gross contamination in water packed apples (not represented for a dietetic purpose) there were only four samples of canned fruits where the sodium content exceeded 5 milligrams of sodium per 100 grams of total contents of the can. One sample of canned applesauce showed 5.9 mg. and three samples of Bartlett pears showed 6.0, 9.0, and 9.5 mg per 100 grams, respectively. Even these relatively higher values would not preclude the occasional use of any of these products in sodium-restricted diets, because the content of sodium in other non-citrus fruits is usually considerably below 3.0 mg per 100 grams.

VEGETABLES—Aside from two instances among the vegetables, one of canned strained peas not represented for use in sodium-restricted diets, and one of canned cream-style corn, and aside from canned beets, carrots and spinach, the vegetable products examined were reasonably free from contamination with sodium. One sample of canned green beans contained 6.5 mg of sodium per 100 grams, which is not high but it is out of line with the results obtained with other samples. The data provided about the processing of this product revealed that water from a base-exchange softening system was used for canning. One sample of green lima beans contained 9.7 mg of sodium per 100 grams. The use of brine solution for quality grading may be suspected in this instance. One sample of wax beans contained 6.1 mg per 100 grams; this product was made with water that had been softened by the base-

exchange method. The failure to wash away all residues of salt solution, after quality grading of the raw product, may be suspected in the sample of sweet peas which showed 14.4 mg of sodium per 100 grams.

Beets, carrots and spinach need special attention. The Food and Nutrition Board offers a single best value for the sodium content of raw beets, 80 mg, and of canned beets, 40 mg per 100 grams. It's interesting to note that 2 samples in this test contained 24.6 and 8.4 mg of sodium per 100 grams respectively. These are the lowest reported anywhere for the sodium content of these foods. Similarly, one sample of carrots contained only 13.0 mg of sodium per 100 grams while the Food and Nutrition Board gives a value of 50 mg's for raw carrots and 35 mg for canned carrots per 100 grams. Also, four samples of spinach in the test showed a sodium content of 9.3, 7.4, 2.4 and 1.2 mg per 100 grams, while others showed considerably higher content as was the case in beets and carrots. The Food and Nutrition Board lists values of 75 mg for raw, 70 mg for frozen, and 50 mg for canned spinach.

If beets, spinach, and carrots could be produced consistently, at or near the low rates obtained in the tests, these foods could be used more regularly in sodium-restricted diets. Investigation showed that the low beet canner does not use lye peeling and has instructed his growers not to use applications of salt for weed control. The low carrot canner does not use lye peeling either and it has been suggested that spinach may take up sodium when grown on soil which is fertilized with sodium nitrate. The data presents a challenge to the canning industry.

OPPORTUNITY AND ACCOMPLISHMENT

Canners should bear in mind that if dietetic canned foods cannot be made sufficiently low in sodium for use in sodium-restricted diets, the alternative is to avoid the products altogether. At the same time, it should be recognized that dietetic canned foods have a high psychological value. Canned fruits and vegetables of high quality add color and attractiveness to a meal. Their availability makes it easier for physicians and dietitians to secure the cooperation of patients who are required to follow special diets. With this in mind, the challenge becomes even more apparent.

Also, if we consider again the milk; meat, fish or poultry; and egg of the basic diet pattern for the sodium-restricted diet, we find that the natural sodium content of these foods, in the quantities recommended, totals 418 mg of sodium. Because the goal is a diet containing 500 mg's, there is a limit to the total sodium content of the remaining foods. In view of the demands placed upon fruits and vegetables in the sodium-restricted diet, and all the possibilities of contamination that exist, beginning with the growing of the crops, the wonder is that practical success ever was obtained in commercial operations. The food industry deserves considerable credit for its accomplishments. "No branch of the industry, in my opinion, quite matches the achievement of the canners in making low sodium foods."

SUMMARY

The results of the present study, which was planned by the executive committee of the N.C.A.-C.M.I. Nutrition Program, and the analyses for which have been made by the Wisconsin Alumni Research Foundation warrant the drawing of a number of conclusions.

(1) Canned water-packed or, in the case of some fruits, juice-packed, fruits and vegetables can be depended upon as suitably low in sodium for use in sodium-restricted diets, if the labeling indicates that the products are dietetic foods, and the sodium content is declared in terms of milligrams of sodium per 100 grams of food, and per serving.

(2) Continued control to avoid the pick up of sodium in processing is necessary. It may be emphasized again that attention should be directed primarily to

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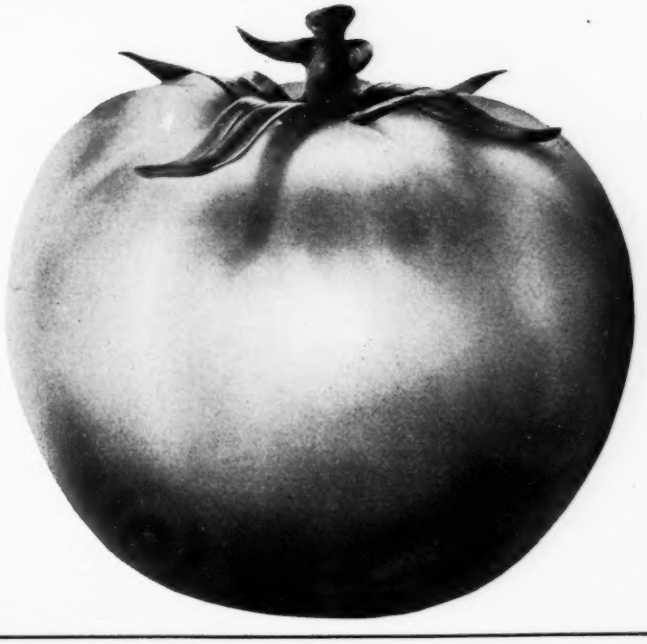

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the following likely sources of contamination:

(a) Sodium from salt in blanch and flume water, as a result of insufficient flushing following the packing of conventional-pack vegetables.

(b) Sodium from water which contains more than 5 mg of sodium per 100 grams, either naturally or as the result of base-exchange methods of softening.

(c) Sodium from lye solutions used in the peeling of certain fruits and vegetables, which subsequently is not quantitively removed.

(d) Sodium from salt solutions used in the quality grading of green peas and lima beans, which is not thoroughly removed afterwards.

(e) Sodium from salt solutions used either as an immersion bath or as a spray, to prevent discoloration of peeled apples and pears, which is not completely removed in further processing.

(3) The possibility of sodium pick up during growing of certain root crops, and green, leafy vegetables, such as beets, carrots and spinach, needs further study, in order to develop practical methods of producing these vegetables with low-sodium contents. There are indications that this goal can be accomplished.

(4) As the canning industry continues its progress in the production of dietetic canned foods, suitable for use in sodium-restricted diets, physicians may prescribe the products and dietetians and consumers may use these foods with ever increasing confidence.

- - -

C. T. Townsend and C. P. Collier of Western Branch Laboratory, National Canners Association, Berkeley, California, presented a paper dealing with the procedures worked out by the National Canners Association in cooperation with the James Dole Engineering Company for determining requirements for the equipment, the product, the containers and the covers, and the operating temperatures necessary to maintain aseptic conditions in the equipment. It is believed that these testing methods could also be applied to other aseptic canning systems.

Factors Influencing the Shelf Life of Canned Foods

PRESIDING: W. J. Mutschler, Research and Development Department, Continental Can

RELATIONSHIP OF VACUUM AND HEADSPACE TO SHELFLIFE OF CANNED FOODS

Summary of Address by
A. G. SKIBBE
Continental Can Company, Inc.
Chicago, Ill.

In most canning practices the aim is to obtain maximum vacuum as economically as possible. The amount of vacuum varies from product to product and also among canners of the same product. There are several reasons for obtaining vacuum in canned foods. These include: the maintenance of can ends in a concave position during normal storage; reduction of oxygen; and the prevention of permanent distortion of can ends during thermal processing.

Maintaining the original shape of the can is important to the saleability of the product. Bacterial spoilage usually results in gas formation, causing the ends to bulge. Consequently, any distortion of the end from the normal concave shape is taken as an indication of spoilage by the industry and by the consumer. Cans with inadequate vacuum will also bulge when exposed to adverse temperature and pressure conditions and will likewise be considered unacceptable.

A low oxygen content in canned foods is desirable to minimize undesirable chemical changes in the product. Establishment of a vacuum is one way of minimizing oxygen content. Some products tend to corrode the container with resultant liberation of hydrogen and a headspace under fairly high initial vacuum is necessary to permit the accumulation of liberated gas without distorting the ends.

During thermal processing, the can contents expand considerably and this may result in permanent distortion of the ends, unless some provision is made for this expansion. This may be accomplished by providing adequate headspace under vacuum.

Since shelflife may have a number of meanings, for the purpose of this discussion, it is defined as the time that a packed food can will remain at a storage condition before the ends of the can flip out or become a springer.

TESTS

A large-scale experimental test pack of blueberries was made in Florida in 1947, in order to evaluate several variables affecting the shelflife of processed canned foods. The effects of variations in plate types and tin-coating weights, and the effects of canning procedures on shelflife were studied.

Can bodies and ends were manufactured from plain type L plate, with 1.50# hot dip tin coating, on our commercial can-making lines. From the 1,000 cans manufactured, 120 were picked at random and packed in Florida on commercial cannery equipment. The blueberries were washed and filled on a Rotary Hand Packed Filler. Hot water (approximately 200°F.) was added and the filled cans were then treated in a hot water exhaust at 204°F., closed, and processed as indicated below:

Exhaust Time in Minutes	Closing Temperature °F.	Process Time in Minutes (212°F.)
0	130	17
2	150	15
6	180	8
10	187	3

Thirty-six cans of each variable were stored at room temperature and 36 at 98°F. for shelflife studies. The remaining cans were used for visual examination of the man and product. Only the 98°F. shelflike data are considered in this paper since many of the cans stored at room temperature have not as yet failed.

The cans were flip tested initially and each month thereafter until failure. Early indications of hydrogen springers may be predicted by determining the loss of vacuum by the flip tester.

As the individual cans failed, the headspace volume was measured. This was done by measuring the volume of water necessary to fill the can through two holes in the can end adjacent to the chuck wall. This procedure measures the headspace volume at the time the ends are ready to flip out, of specific interest in shelflife studies.

FINDINGS

It was determined that predicting shelflike from headspace volume or vice versa would not be very precise for individual cans.

In order to determine shelflike more accurately, rather than using data from individual cans, Continental Can Company's laboratories customarily compare the shelflike of different variables on the basis of the time required for 25% of a lot of 36 cans to fail.

To evaluate the effect of vacuum on shelflife for other products, data were accumulated on apricots and tomatoes and statistically analyzed. The data on apricots were obtained over a period of five years with seven experimental packs in plain, 1.50# hot dip tin plate cans. The data show high correlation of the initial flip vacuum with shelflike at 25% failures.

The data on tomatoes were obtained over a period of five years with ten experimental packs in plain, 1.25# hot dip tin plate cans. The data on tomatoes also show high correlation of the initial flip vacuum with shelflife at 25% failures.

It was evident from comparisons that it is more important to control and maintain a good vacuum in some products

than in others. Of the three products compared, tomatoes are the most sensitive to a change in vacuum. For example, assuming commercial packing conditions of 10-15 inches of vacuum, an increase of 5 inches of vacuum for tomatoes will increase the shelflife eight months, while an increase of 5 inches of vacuum for blueberries shows an increase in shelflife of seven months. For apricots, a 5-inch increase in vacuum will show an increase of three months in shelflife.

Even though the tomatoes are the most sensitive to changes in vacuum, it is very obvious that the corrosivity of the product is also very important. The data in Figure 8 show that tomatoes are the least corrosive and the blueberries the most corrosive of the three products compared. For example, blueberries packed with 5 inches initial internal vacuum would have a shelflife of approximately 3½ months. Apricots similarly packed would have 13½ months shelflife and tomatoes about 20 months. Therefore, it is very important to obtain adequate initial vacuum for corrosive products, such as blueberries, in order to get satisfactory commercial shelflife.

Results indicate that high initial vacuums are desirable from the standpoint of shelflife but the use must be tempered by the strength or paneling resistance of the container. All packages are designed to meet certain technical and economical specifications and in many cases these must be worked out between the individual canner and the can manufacturer.

INTERNAL CORROSION OF CANS—EFFECT OF STEEL BASE COMPOSITION AND OF TIN-COATING WEIGHT

Summary of an Address by

V. W. VAURIO
U. S. Steel Company, Pittsburgh

Tin plate is essentially thin, mild, steel sheet coated with a much thinner layer of tin, but it is a fairly complex product. Metallurgically, we can consider tin plate as a nine-layer sandwich. The steel base constitutes the filling or core, and on each side are successively an alloy layer, a tin layer, a protective oxide layer, and an oil layer. How tin plate stands up in use depends on the nature of one or more of the layers.

EFFECT OF TIN-COATING WEIGHT

Intuitively, we feel that the heavier tin coatings should yield more-corrosion-resistant tin plate, but data from previous studies failed to substantiate the expected relation between tin-coating weight and shelflife. Lots of No. 50 electrolytic tin plate have been found as good or better than 1.25 coke-plate lots, etc. Some of the differences may be attributable to the steel base. Tests would seem to substantiate this.

HOWARD R. SMITH
Washington Research Laboratory
National Canners Association

In the U.S. Steel Corporation Laboratories, we have made a number of pack-test investigations on the effect of increasing the tin-coating weight, and we find that for a given steel, increasing the tin-coating weight increases the shelflife. The obvious inference, then, is that the erratic results in the tin coating weight studies must have been due to differences in the steel base.

EFFECT OF STEEL BASE

The steel base may differ in a number of ways, for example, in composition and in processing. Among steel products tin plate is unique in that very small differences in either composition or processing can produce large differences in corrosion resistance. The composition factors that influence modern can corrosion are primarily phosphorus and copper.

Studies were made of the influence of copper and of phosphorus on the service life of lacquered coke-plate cans tested with RSP cherries, black cherries, Italian prunes, loganberries, and strawberries. The deleterious effect of phosphorus stood out in sharp relief in every instance. The influence of copper was not so clear cut. With loganberries, for instance, some of the best lots had high copper contents.

The effect of steel composition on the corrosion performance of electrolytic tin plate has been studied in the U. S. Steel Laboratories to some extent. The high-phosphorus Type MC lots were consistently poorer than the other steels with the acid fruits, both in plain cans and in lacquered cans. The effect with tomato juice was not very marked. Copper bearing plate showed no significant difference in plain can tests with prunes but in the lacquered-can tests, the Type L(a) plate is significantly superior. In the plain-can tomato-juice tests, however, the Type MR plate exhibited the best pack performance of all the lots tested.

An interesting sidelight in these lacquered-can tests is that the Type L lots failed by hydrogen-swell formation, whereas a substantial percentage of the Type MC and Type MR cans failed by perforations. We have no explanation for this difference in behavior.

From the previous pack data, one might have inferred that copper is beneficial for tomato-juice cans, but consider the results of another experiment in which copper was added to ingots of Type L steel to provide a range of copper of 0.02, 0.11, and 0.24 percent. In this experiment, copper was apparently detrimental with four products including tomato juice. Why the discrepancy with the earlier experiment? Perhaps a difference in food product. Perhaps some slight difference in processing the tin plate.

It is apparent that the composition of the steel base can have some effect on corrosion performance, but the effect is not clear. Some other factor besides steel composition can affect the results, and this is the area in which intensive research is currently being conducted.

THE EFFECT OF STORAGE TEMPERATURE ON THE SHELF LIFE OF CANNED FOODS

From an Address by

DR. D. K. TRESSLER
Quartermaster Food and Container Institute

The importance of maintaining canned foods at relatively low temperatures (above freezing) has long been recognized, but only recently have quantitative data been available to indicate clearly exactly how effective refrigeration is in maintaining the vitamin content, color, acceptability and "quality" of canned foods during long storage periods. Further, few studies have attempted to correlate the storage life of the product and the temperature at which it is stored. Some of the more comprehensive reports of researches in this field are reviewed.

Kohman and Sanborn in 1929 found that not only is the life of a can extended by storage at lower temperatures, but the natural color of the fruit is preserved. Loganberries and strawberries after two and one-half years storage at 32°F., had practically the appearance of freshly canned berries. Those held for the same time at 50°F. but which had not become springers or perforated, were considerably bleached. Those held at higher temperatures had much earlier become a total loss.

Beattie, Wheeler and Pederson in 1943 and Pederson, Beattie and Stotz in 1947,

found that notable changes occur, depending on the temperature of storage and the amount of air present, in the loss of ascorbic acid and sucrose and in color, flavor, and viscosity. Only slight changes were noted in samples held at 34°F., whereas in most instances, the deterioration at 113°F. was profound.

Other researchers in 1945 and 1948 studying the effect of times and temperatures of storage on ascorbic acid, carotene, thiamin, riboflavin, and panthothenic acid found that tomato juice retained 92 percent of the original ascorbic acid content after storage for one year at 30°F.; only 20 percent at 110°F. Others observed that canned foods stored at 50°F. retained a higher percentage of each of the 5 vitamins than those stored at higher temperatures. Still others found that elevated storage temperatures (e.g., 80°F.) accelerated losses of ascorbic acid, and thiamin more than extended storage periods. Still others found that losses of ascorbic acid and thiamin were more serious than those of the other vitamins studied. Freed, Brenner and Wodicka in 1944 studied the stability of thiamin and ascorbic acid content of representative canned foods and worked out nomographs from which the probable rate of loss of these vitamins could be predicted for any given average warehouse temperature.

In general it can be stated that while vitamin content is only one index of many indices of quality of canned foods, a great loss of vitamin content is usually accompanied by a somewhat similar loss in acceptability.

Studies conducted at the Quartermaster Food and Container Institute over the last three or four years have shown the effect of temperature and time of storage on some chemical and sensory changes in a variety of food items. Temperatures used in this research were 40°, 70°, and 100°F. When canned apricots were stored for two years, changes in acceptability of the product at 100°F. were rapid, while at 70°F. little change occurred, and at 40°F. the product appeared to be unchanged. Cans were swollen after 24 months of storage at 100°F. Much the same occurred in a test on canned peaches.

Pronounced thiamin loss and decline in acceptability during 100°F. storage were apparent in canned sweet potatoes. Also, an increase in saline fluorescence was noted.

Changes in acceptability of foods are chiefly the result of chemical reactions leading to different flavor and physical characteristics. That these reactions are time and temperature dependent is obvious from much work reported in the literature and from the data presented. The rates of many of these reactions more than double for each 18°F. rise in temperature.

PREVENTING CORROSION OF EXTERIOR OF CANS

From an Address by

A. R. BEALL and E. V. CASSADY
Technical Service Division
American Can Company

The possibility that the world's supply of tin might at some time be curtailed has caused the canning industry to reduce the use of tin and adopt for many products, containers made of electrolytic tinplate with a tin coating as low as one-quarter pound per base box. Further, these containers in most instances have no outside protection other than the plain electrolytic No. 25 coating, but commercial experience has demonstrated that they have adequate resistance to outside corrosion when a few simple basic rules are followed in handling and storage.

Any tin plate, whether 1.50 lb. hot dip or No. 25 electrolytic, will show the formation of iron rust if exposed to moisture and air for any length of time. Although the No. 25 electrolytic coating has considerably less tin than the 1.50 lb. hot dipped coating, the former will give good commercial service if not exposed to adverse processing or storage conditions conducive to rust formation.

Retorts must be well vented, boiler carry-over should be minimized, and containers should be cooled only enough so that they will dry almost completely after the cooling operation and before casing and warehousing. Dry storage conditions should be maintained continuously for the filled cans.

TESTS FOR MILITARY USE

The extensive use of lighter electrolytic tin coatings for cans for civilian trade has led to further tests on their uses for the military. An experimental program was designed to provide data regarding external rusting of all types of tin conservation cans, under normal storage conditions characteristic of world-wide military usage under times of emergency.

Three styles of containers were chosen:

(1) Processed cans, as used for fruits, meats, and vegetables.

(2) Vacuum key open style, as used for dry rations, peanuts, etc.

(3) Oblong cans with screw type nozzle and cap, often called insecticide cans.

No. 25 and No. 50 electrolytic and 1.25 lb. hot dipped tin plates were selected to represent the range commercially employed in 1950 in can making. Also included were black plate (CMQ) and chemically treated steel (CTS).

Two kinds of exterior organic coatings were employed—precoating and procoating (now called postcoating).

The processed cans were packed with a starch solution in a cannery under commercial conditions. The key open cans were vacuum packed with dry peas in a cannery. The insecticide cans were packed with a kerosene type naphtha in a paint plant.

EXPOSURE CONDITIONS

The Office of the Quartermaster General arranged for outdoor exposure to typify world-wide climatic conditions as follows:

(1) Temperate at Fort Lee, Va.
(2) Desert at El Centro, Calif.
(3) Arctic at Big Delta, Alaska
(4) Tropic at Corozal, Panama Canal Zone

EFFECTS OF STORAGE

Vacuum Retention and Perforations—No loss of vacuum, perforation, or other spoilage attributable to exterior rusting was found at any site except the one in the Panama Canal Zone after three years' exposure. Rust formed during storage in cases was only superficial and did not tend to pit through the steel plate except at Panama. During the third year of storage at the Panama site, the infestation by insects in the bottom layer of cans in the bottom cases on the pallets became so severe as to cause perforations of a few cans from rust, initiated by excreta of the insects. This occurred on both coated and plain cans.

Plate performance—Rusting decreased slightly with increased tin coating weights, but organic coatings exhibited a much greater protective effect than did the heaviest tin coating weights.

Precoated and postcoated No. 25 electrolytic tin plate cans were more rust resistant than plain hot dipped plate cans.

Coated CTS plate was superior to CMQ plate and in many instances was equal to tin-plate cans in rust resistance.

Organic Coating Performance—Postcoated cans showed much less rust than did precoated or plain cans with corresponding plate. The non-alkyd postcoating was slightly superior to the alkyd material. The electrostatic spray method was slightly superior to the dip coating method.

Precoated cans were considerably more rust resistant than plain cans. Scratches in the organic coatings did not appreciably reduce protection against rusting unless the scratches penetrated through the tin coating into the base steel.

CONCLUSIONS

Commercial experience has proved that most packers can use plain No. 25 electrolytic plate cans for civilian markets without experiencing external corrosion problems. These tests reported herein have again demonstrated that the thickness of the tin coating has only a slight effect in prevention of rust and that the military can use light tin coatings on cans without loss of product due to perforations from rusting, and should experience only superficial rust in cases under severe storage conditions. Where storage may be especially severe, such as prolonged tropical storage, postcoating affords maximum protection.

Quality Grading and Washing

PRESIDING: Roger Lueck, Research Dept. American Can Co.

The conference on Quality Grading and Washing, jointly sponsored by the National Canners Association and the Canning Machinery and Supplies Association, held on Monday afternoon, had Roger Lueck, Vice-President in Charge of Research, the American Can Company, as presiding officer. Panel members included: Frank S. Langsenkamp, Jr., of the F. H. Langsenkamp Company, Indianapolis; W. N. Hughes, Chisholm-Ryder Company, Columbus, Wisconsin; Harvey A. Scheel, Green Giant Company, La Sueur, Minnesota, and Allan Warehime, Hanover Canning Company, Hanover, Pennsylvania.

QUALITY GRADING

Leading the discussion on Quality Grading were Harold L. Link of Food Machinery and Chemical Corporation and Leonard Berth, The Larsen Company, Green Bay, Wisconsin.

Dr. Link described the theory of specific gravity separators and outlined the many variables that affect quality graders with specific reference to the grading of peas. He described the necessity for quality graders, briefly recounted the quality grading methods in use before the specific gravity separator was introduced and defined the types and operation of those presently on the market.

Mr. Berth discussed quality grading operations from the viewpoint of the canner. He named a long list of variables that make accurate quality grading of peas extremely difficult, if not next to impossible. "There is no hour of operation," he said "that is like any other hour, and it is because of these variables that we find accurate quality grading difficult. Despite the work done by ourselves and other vegetable processors to find a reasonably accurate formula to apply to quality grading operations, it seems to be all for naught. There is more art to quality grading than science."

Some of the variables he mentioned in connection with the quality grading of peas were: (a) The variety, maturity and sieve size of the product; the climate from the start to the end of the season; the bacteriological and enzymatic action from the field to the grader. (b) Blanching before or after grading—variable blanch condition, time, temperature and load. (c) The quality grader itself—the load, turbulence, temperature, brine level, brine density, calcium content of the salt, foaming, carryover of water to quality grader, salometer calibration variability, time in the grader, product distribution at feed end.

Corrective Recommendations—To help overcome some of these variables, Mr. Berth suggested (1) a log of sieve size and tenderometer grade. (2) Constant cutting of final product. (3) Canning samples off quality grader for sieve size and tenderometer grade. (4) Careful job training of the quality grader operator and (5), constant quality control department attention.

WASHING

On the washing panel, Francis Miller of the Key Equipment Company, Milton-Freewater, Oregon, represented the manufacturer with R. G. Thomas of the Illinois Canning Company, Hoopeston, Illinois, representing the canner.

Since the beginning of the Food Processing Industry, washing has been of paramount importance, Mr. Miller told the audience. Describing the various types in use today, he said that the dry mill does a fairly good job in removing the bulk materials from peas, that the rotary type reel and spray equipment units do a reasonably good job of removing dirt, juices, and fine particles. However, they are not very effective in removing carry-over, pods, sticks, leaves, etc., he said. Secret of getting a good wash with the flood type equipment, according to Mr. Miller, is to allow ample time in the process. Riffle type equipment

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is generally employed to remove stones, iron particles, etc. Flotation washers through injection of air and prepared solution create a froth or foam which selectively attaches air bubbles to the foreign material, thereby changing its density so that it floats and is removed as trash, whereas the sound product settles in the solution. This method also, he said, does a good job of removing dirt and juices as well as separating splits, skins, etc.

Mr. Thomas said that most of the difficulties from washing arise from the fact that no two batches of the raw product are the same. A washing procedure that may be very satisfactory at one time may be far from adequate the next. One way the Illinois Canning Company overcomes this variable factor in handling asparagus, he said, is by having an overflow receiving tank at all times to remove soluble and insoluble extraneous material. The overflow is stepped up considerably, and, when necessary, additional agitation is produced in the receiving tank, when conditions require it. Also, the spray action in the rod washer is increased, and if necessary a booster pump is installed in the water system to further increase the spray pressure. By the same token when the stock is especially clean and/or tender, the process is reversed.

Different products need different techniques. In packing beans and peas Illinois has found riffle washers exceedingly helpful. All of the washing possible is given corn for the cream style pack. Following husking the corn is pre-inspected. This is followed by a wash in a rod type rotary washer, then comes inspection and trimming and the corn is again washed in another rod washer. Following this an additional spray wash before cutting.

In canning dried soaked beans the silking tanks are overflowed as each bag is added to the tank. Also, special rod washers are used preceding and following the blancher. The rods are spaced according to the variety and the size of the bean packed.

Mr. Thomas listed six basic characteristics canners need in washing equipment: (1) Simplicity of design (2) Durability (3) Water and vapor-proof motors of sufficient size to handle overloads (4) Direct drive (5) Construction of non-discoloring materials (6) Easy cleaning.

SOME SPOILAGE PREVENTION ASPECTS OF WASHING AND QUALITY GRADING OPERATIONS

C. Wallace Bohrer of the Washington Research Laboratory, NCA, called washing one of the most important unit operations of the food preparation industry, from a bacteriological standpoint. Bacterial counts indicate possible

C. W. BOHRER
Washington Research Laboratory
National Canners Association

sources of contamination and may be used as an index of washing efficiency or the need of frequent clean-up in certain areas. Excessively high product counts might result in some quality deterioration if the product were held for a considerable period of time under conditions favorable for the development of the contaminating organism.

Chlorine aids in reducing the count in the washer but exerts no direct contamination control in the areas it cannot reach, such as corn cutters or mechanical conveyors. Thermophilic flat sour organisms are extremely resistant to killing by chlorine in quantities practical for use in the canning plant.

When the product meets with some resistance to flow, as in tortuous flumes equipped with water sprays or when it is jumbled in real washers under strong sprays of water or forced beneath the surface of water in paddle type washers a more pronounced reduction of contamination occurs.

In washing such products as asparagus, mushrooms, and spinach which sometimes present extreme washing difficulties, special attention is necessary. Since the raw product as it enters the factory carries a heavy load of both soil and bacteria, the initial wash should be (1) as vigorous as the nature of the product will allow, (2) as rapid as is possible to prevent excessive absorption of the bacteria laden wash water and, (3) in a water volume as small as is practical so that the water can be wasted and replaced continuously to minimize bacterial accumulation. The subsequent washes of the product should be thoroughly agitated.

FISHERY PRODUCTS CONFERENCE

Sunday February 20

PRESIDING: A. Mendonca, Chairman, Fishery Products Committee, NCA

Effective Management of Marine Fisheries

The viewpoints of the biologist, the sportsman, and the commercial fisherman on effective management of marine fisheries—when is it necessary and how it may best be accomplished, were expressed at the fishery products conference held on Sunday afternoon. Oddly enough, the views were not too divergent on this highly controversial and important subject.

THE BIOLOGIST

Dr. Clarence P. Idyll of the Marine Laboratory, University of Miami, started the discussion by defining "fishery management" as "the manipulation of fishing effort to insure that the population yields the maximum possible amount of fish by weight, not for one year only, but permanently, and to insure that the fish arrive on market when they can be best absorbed. Good fishery managtment should involve encouragement of increased fishing effort if under exploitation can be proven and if markets exist for more fish. It should also be prepared to impose restrictions on fishing where overexploitation can be shown to exist. But this should not be its sole function."

The most difficult part of the problem, he said, is how effective management can best be accomplished. Effective management implies proof of the condition of the fishery before control is proper and the proof is always hard to achieve. The fishing industry has frequently suffered

severely, and unnecessarily because of restrictive regulations imposed without proof of their need. Reduced catches are not necessarily proof of depletion nor are lower catches per boat or per man nor the pained outcry of opponents of all kinds of commercial fishing. The proof comes only through the painstaking methods of science, the careful analysis of production records, and the unraveling of the complexities of the biology of the fish themselves. The tools for these studies have improved greatly in the last three decades, and are increasing at an accelerated rate. We can afford then, to insist more and more on adequate proof of need, before restrictions are placed on fishing activities.

THE SPORTSMAN

Prefacing his remarks with the statement that "where two salt water anglers gather in one spot, it is almost a certainty there will be two almost entirely different opinions on effective management of marine fisheries," Henry Lyman, Publisher of Salt Water Sportsman Magazine, stated that his remarks would definitely not express the opinions of a great many rod and reel men. "They do, however," he said, "express in general terms the opinions of the sportsman-fishermen who realize that the ocean is not their own private stamping grounds who are willing to discuss rather than to battle and who want to see better fishing for all concerned."

Mr. Lyman said fishery management is necessary right now and for all time. "By this I do not mean control of the fishing which would impose undue hardship upon any one group. I do mean control of the fishery to obtain maximum yields to all grounds without destruction of the fishery itself."

Speaking of over fishing, Mr. Lyman said, "There are some who claim that overfishing of any particular marine species is almost impossible with present methods available. Those who claim this overlook one important item. It is possible that fish of a marketable size cannot be overfished. However, if the young of this same species are destroyed during the process of catching the marketable fish, if the spawning grounds are ruined either by fishing methods employed or by pollution from industry, if expansion of our population removes former natural habitat, I submit that overfishing can, does, and will ruin the fishery."

Good management, he said, does not necessarily mean more stringent control. As a matter of fact, quite the reverse is true. When a fishery thrives because of good management, controls are relaxed and all concerned benefit.

The well known publisher-sportsman said that effective management of marine fisheries is very easy to talk about, but not so easy to accomplish. One very necessary ingredient, he said, is the marine biologist. With the number of anglers increasing by leaps and bounds, marine sport fishing has become big business, in certain sections of far greater value than commercial fishing. When it can be proven that one particular species contributes more to the economy as a sport fish than it does as a market fish, then and only then should stringent restrictions be put upon the commercial fisherman. Only a few species come under this classification today. With proper management this number will remain small.

THE COMMERCIAL FISHERMAN

John J. Real, of the Fishermen's Cooperative Association, San Pedro, California, speaking of the problem as it relates to "Domestic" ocean fisheries (not "international" or "high-seas" fisheries) said it would be an 'ostrich-like" approach to avoid discussing the subject in terms of the controversy which surrounds it. On one side of the debate stands the commercial fisherman and on the other the sport fisherman. At times allied with the latter is the "political conservationist". Mr. Real at the outset denied emphatically the idea that the commercial fisherman will never submit to an invasion of his "right" to fish, and that he will never accede to the necessity for controlling his activities.

He compared the individual commercial fishermen's view with that of the ordinary citizen with respect to taxation or other restraints on his liberty, or as the patient considers medicine. He doesn't like it but he does not quarrel with its necessity in the proper cases. "No man loveth his fetters, be they made of gold." Collectively, he said, he will not only accept but will seek curbs on himself where he is convinced that such is necessary to the continued well being of the fishery. As a good citizen he regards the legitimate protection of a natural resource as important to the present and future welfare of the nation. As a thoroughly practical businessman, he regards it as vital to maintain the fishery resource at as constant a level as can be achieved by any act of man. This does not seem to be recognized by the proponents of unnecessary restriction. They do not seem to realize that the initial cost and the normal useful life of a processing plant or fishing vessel is far greater than that of a rod and reel. They do not consider that those persons making such investments are fully conscious of the necessity for maintaining a constant source of supply of raw fish. To fail to recognize this is to attribute a degree of financial stupidity to the commercial fishing industry not warranted by its business success.

Actually it is the commercial fisherman who gains the most from sound management and loses the most if there is a lack of it where needed. The sportsman gains the least with management and loses the least if it is not there. The first statement is made on the obvious, the latter is based on the accepted proposition that commercial fishing will never totally deplete a stock of fish. If the stock becomes so low as to become unprofitable to fish the commercial fisherman must leave it. There will still be fish in the ocean and usually in sufficient quantity to sustain a sport fishing activity.

PROOF OF NECESSITY

It is therefore not sound management of a fishery which the fisherman opposes, but rash, ill-considered plans of limitation. The commercial fisherman rightfully demands, before an invasion of his privilege occurs, that proof of the necessity of control and its consequent benefits to all be established beyond a reasonable doubt or at least by a preponderance of the evidence. What is usually interpreted as short-sightedness, indifference or greed on the part of commercial fishermen when controls are proposed, is actually nothing more than the exercise of legitimate caution in an analysis of the need for, or the effects of, proposed restrictive measures. This is because most of the usually proposed restrictive devices are alleged to be nothing more than mere experiments. The fisherman can little afford to risk an exploratory operation that might wind up as an autopsy.

PRIMARY PURPOSE

The oceans of the world were not designed as vast aquaria for the visual pleasure of mankind in their flora and fauna. Nor were they created as playgrounds or international parks for man's recreation alone. These two uses have their proper place but are neither primary nor exclusive. The fish in the oceans were created to be taken and utilized by man. Since it cannot be left to each man to catch his own fish, commercial fishing is needed to assure that the fisheries will attain their highest degree of utility. It is paramount that the concept of conservation of the ocean fisheries be viewed in that light.

Conservation is usually expressed in terms of restraint and the word itself connotes a "saving." The obvious corollary questions of "for whom" or "for what" are seldom answered in the passionate pleas for preservation by restriction. Since the primary purpose of the creation of the major ocean fisheries is to feed the world, the answer to these questions must of necessity be "for the world, and for the purpose of satisfying the world's food requirements."

CANNING MACHINERY AND SUPPLIES ASSOCIATION RE-ELECTS OFFICERS

All Officers of the Canning Machinery & Supplies Association were re-elected at the Annual Meeting held at the Conrad Hilton Sunday morning, February 20. They are: President, E. N. Funkhouser, Dewey & Almy Chemical Company, Cambridge, Massachusetts; Vice-President Cliff K. Wilson, Food Machinery & Chemical Corporation, San Jose, California and Secretary - Treasurer, W. D. Lewis.

New Directors are: Jules L. Bauer, Interchemical Corporation, New York City and William E. Vaughn, American Can Company, New York City. They replace John Dingee of the Can Manufacturers Institute, and Bryan Clark Associated Seed Growers, New Haven, Connecticut.

Mr. Dingee in his new capacity with the Can Manufacturers Institute is no longer eligible for membership in C.M.& S.A. He was elected to Honorary Membership for life, in consideration of his extraordinary service to the Association. Mr. Dingee is only the second man to be so honored, the first being Past President Gene Hildreth, formerly of Owens-Illinois, who left that firm to join the National Fruit Product Company at Winchester, Virginia.

Final registration count figures show that total attendance for the 48th Annual Exhibit came very close to matching that of the record breaking attendance set for the 1953 convention in Chicago, when 8,839 persons registered. This year's registration totaled 8,718, but it is believed that most members of the National Food Brokers Association were admitted on their NFBA badges instead of registering, as in previous years, otherwise this year's attendance would have set an all time high. It was found that 450 NFBA members registered in 1953 and only 270 did so this year. Total attendance for the five day period, February 19 through February 23, were: Canners 2893; Canadian Canners 59; Frozen Foods 89; Pickle Packers 122; Preservers 64; Food Manufacturers 428; Food Brokers 270; Food Retailers 50; Wholesale Grocers 95; Government and Education 158; Press, Radio and T-V 203; NCA Staff 60; Guests and Miscellaneous 1026; CMSA Members (exhibitors and non-exhibitors) 3201; for a grand total of 8,718.

The Third Annual Technical Conference, jointly conducted by National Canners Association and Canning Machinery & Supplies Association, for research, engineering and production personnel of canning companies, was well attended and enthusiastically received.

50 attendance awards, 10 each day, worth many thousands of dollars, were won during the five days of the exhibit. Two individuals were lucky enough to win on two separate days—Mrs. Harry Kraft of the Mt. Olive Pickle Company, Mt. Olive, North Carolina, won a Smith-Corona Typewriter on the first day, and on the fifth day duplicated the feat by winning typewriter No. 2. The other two-time winner was R. A. Severson, Reynolds Brothers, Inc., Sturgeon Bay, Wisconsin; on the fourth day he won a Black & Decker ¼" Drill Set, and on the fifth day was awarded a Sunbeam Toastmaster.

MESCHTER HEADS PRESERVERS

Climaxing one of the most successful conventions in its 36 year history, members of the National Preservers Association elected W. Kyrel Meschter of American Preserve Company, Philadelphia, President of the Association for the coming year. J. N. Major, Jr., Old Virginia Packing Company, Front Royal, Virginia; Paul H. Smucker, The J. M. Smucker Company, Orrville, Ohio; and A. H. Blount, Teagarden Products Company, San Leandro, California were elected Vice-Presidents; and John C. Fosgate, Chester C. Fosgate Company, Orlando, Florida, was re-elected Secretary-Treasurer.

119 people registered for the two-day session, which featured a total of four panel discussions, which were uniformly excellent and enthusiastically received.

J. Morris Browning of Mary Ellen's, Inc., Berkeley, California, made a progress report on the color retention research which has been carried on for the past seven years by the University of California.

Principal matter of business was the approval of the underwriting of a $30,000 program of public relations and publicity for the preserve industry, and to retain the J. Walter Thompson Company to administer the program. 60 percent of the needed funds were subscribed and an intensive drive to round up the remainder is currently under way.

By Amendment to the Constitution and By-Laws the Executive Committee, now officially designated Board of Directors, was increased from 9 to 12 members with the following elected to serve: J. N. Major, Jr., Paul H. Smucker, A. H. Blount, John C. Fosgate; William E. Hanks, The Bama Company, Birmingham, Alabama; Buell H. Bedford, Bedford Products, Inc., Dunkirk, New York; Jack Dykstra, Glaser, Crandell Company, Chicago; Francis J. Oelerich, Oelerich & Berry Company, Chicago; Joseph A. Raphael, Palmer Fruit Products Company, Long Island City, New York; J. S. Phillips, Puritan Preserve Company, San Francisco; Arthur Tucey, Southwest Food Products Company, Los Angeles; and Alvin W. Crain, The Whipple Company, Natick, Massachusetts

Pictured left to right are the newly installed officers in the National Red Cherry Institute: Past President Gary S. Morgan, President, John C. Morgan Company, Traverse City, Michigan; Incoming President B. F. Batcheler, General Manager, Fruit Growers Co-Operative, Sturgeon Bay, Wisconsin; Vice President H. B. Pearson, Alton Canning Company, Alton, New York; and Executive Secretary-Treasurer William B. Powell, Chicago, Illinois.

YOUNG GUARDS HONOR NELSON BUDD

Robert L. (Bob) Eirich of the H. S. Crocker Company, Inc., Baltimore, is the new President of the Young Guard Society, succeeding Reid W. Jensen, Varney - Sunnyside Packing Company, Sunnyside, Washington. J. Ed Raley of Raley Brothers, Inc., Atlanta, Georgia brokers, is First Vice-President, with C. J. Tempas, Jr., Green Giant Company, Beaver Dam, Wisconsin, Second Vice-President. Herb Shek, H. S. Crocker Company, Inc., Baltimore, had the duties of Treasurer tacked on to his Secretarial duties. Arthur J. Judge of "The Canning Trade", Baltimore, continues as Recording Secretary.

Nelson H. Budd, Director of the Information Division of the National Canners Association, was presented with a beautiful hand inscribed scroll in appreciation for his cooperation in the Young Guard cause, done in leather and silk and stamped in gold. The inscription reads:

RESOLUTION OF APPRECIATION

WHEREAS, Nelson H. Budd, Assistant Secretary and Director of the Information Division of National Canners Association, through his wide experience, deep understanding and cooperation, has contributed greatly to the affairs of the Young Guard Society, as well as the Canning and Allied Industries, therefore be it

RESOLVED: that we, The Young Guard Society, assembled at Chicago at our 23rd Annual Meeting, February 20, 1955, do express our genuine gratitude and sincere appreciation to Nelson H. Budd in this form of tribute, and be it further

RESOLVED: that the future hold in store for him, health, happiness and success which he so richly deserves.

(signed) YOUNG GUARD SOCIETY,
NCA and AI
Reid Jensen, President
Robert W. Mairs, Treasurer
Herbert E. Shek, Secretary

G. F. LABORATORY PROMOTIONS

Two promotions have been made at General Foods Corporation's Central Laboratories in the appointment of Bruce A. Lister as Laboratory Director for Product and Process Development, and Reinhardt Thiessen, Jr., as Assistant Laboratory Director in Scientific Development.

Mr. Lister has been with Central Laboratories since 1943, and most recently was Assistant Laboratory Director.

Mr. Thiessen with the Central Laboratories since 1942, when he joined the research organization as Project Leader, was Section Head prior to his new appointment.

CAL-PAK REVAMPS SALES SET UP

In a move to more closely parallel market patterns and offer the trade a closer integrated service, Irving H. Granicher, Vice-President in Charge of Marketing, has announced the reorganization of responsibilities in the Sales Department of the California Packing Corporation. O. E. Seegelken becomes General Sales Director, and Ross B. Yerby, Jr., formerly Division Sales Manager in New York, will be transferred to San Francisco to become an Assistant General Sales Director. The most important change involves the decentralization of sales responsibilities. This will be accompanied by regrouping of geographical areas to form eight general sales territories. James S. Gray moves from Philadelphia to New York to become Division Sales Director for New York, New England and the Mid-Atlantic territories; L. C. Dalton is Division Sales Director for metropolitan Chicago and East Central territories; F. H. Roddy of Omaha becomes West Central Division Sales Director; M. G. Paterson, Southeastern Division Sales Director; J. P. O'Brien, Southwestern Division Sales Director; P. L. Lanzit, Northwest Division Sales Director; F. C. Hasemann, Division Sales Director for Northern California, Nevada and Hawaii; and Lyman C. Dunbar, Southern California Division Sales Director.

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NEWS and Personals

PENNSYLVANIA CANNERS WORKSHOP

The Second Annual Pennsylvania Canners Workshop will be held in the Assembly Room of the Manufacturers Building, 25 N. Duke Street, York, Pennsylvania, on March 8 and 9. Subjects to be discussed at this meeting will cover those problems that canners face daily, cannery waste disposal, water problems, warehousing, and safety. Room accommodations, where required, will be made directly to the Yorktowne Hotel, York. Secretary Jack Grey will want to know who will be in attendance so that adequate arangements can be made for the banquet to be held on Tuesday evening, March 8, at the Yorktowne Hotel.

STOKELY APPOINTS SHEFFIELD

L. J. Noonan, Vice-President and Director of Sales, has announced the appointment of Earl A. Sheffield as Assistant Sales Manager of the Stokely Division of Stokely-Van Camp, Inc. Mr. Sheffield brings to his new duties at Stokely-Van Camp, long experience in the food field. He was with Ball Brothers Company from 1922 to 1950 as salesman and Assistant Sales Manager in charge of sales promotion, and finally as Sales Manager of the Home Canning Products Division, directing all sales and advertising activities. Since 1950, when Mr. Sheffield resigned from Ball Brothers, he had his own brokerage business in Indianapolis.

INDIANA CANNERS IN FAIR SHOW

The Indiana Canners Association will have a large booth in the No. 2 spot at the Famous Foods Festival in the Manufacturers Building at the State Fair Grounds, March 9-13. The Association will have a massive display, both stationary and moving, of all products packed in Indiana under the individual canner's label. The Show is being held in conjunction with the Indiana Retail Grocers and Meat Dealers Association's three day Convention, and it will also be opened to the public. All canned foods used in the display, if return is not requested, will be given away in such a manner as to build good will for the industry in Indiana.

Miss Marjorie Campbell, 17 year old, Red Hook, N. Y., high school senior, baked her way to the 23rd National Cherry Pie Baking Contest Championship in Chicago. The $500 scholarship in home economics at the school of her choice, part of the winner's gifts, will be used either at Cornell or Iowa State College according to Marjorie. She also won a flying trip to Washington, D. C., a tour of New York City, and the General Electric range on which the winning pie was baked.

HARMON ELECTED HUNT VICE-PRESIDENT

Joseph R. Harmon, head of Hunt Foods, Inc., legal department, and Secretary, has been elected Vice-President of the Fulton, California canning firm.

STONE CONTAINER APPOINTMENT

Harold W. Parker of Dover, Delaware, has been appointed sales representative of the Stone Container Corporation for the States of Delaware, Maryland and Virginia, according to David R. Lepper, Vice-President and General Manager of the corrugated box firm's Eastern Division in Philadelphia.

ILLINOIS FALL MEETING

The Fall Meeting of the Illinois Canners Association will be held at the Bismarck Hotel in Chicago, Thursday, November 3. Those expecting to attend are asked to make reservations for hotel rooms at the earliest possible date, since another large group will be meeting simultaneously and will have most of the Loop hotels tied up. In making reservations consideration should be given to the possibility of attending functions yet to be announced and may wish to schedule for the preceding day, November 2, as was done last year.

WISCONSIN SALES CONFERENCE

The Marketing Committee of the Wisconsin Canners Association has arranged a Sales Conference for Wisconsin canners, to be held at the Schroeder Hotel in Milwaukee on Thursday, March 10 beginning with registration at 9:30 A. M., luncheon at noon and adjournment about 4:00 P.M. The Morning Session will afford Wisconsin canners a preview of canned food promotion programs for the next six to eight months. An outstanding speaker at the Luncheon Session will suggest how canners may keep pace with the rapid changes in the distribution field. The Afternoon Session will bring together a panel of leaders in the distribution field to discuss how the independent canner can work more closely with his distributor.

U. of W. CANCELS SALES TRAINING COURSE

Due to lack of interest, the University of Wisconsin has cancelled the Sales Training Institute originally scheduled to be held at the University, April 27 to 29.

ILLINOIS SAFETY PROGRAM

The accident frequency reporting program conducted by the Illinois Canners Association at the beginning of the corn and tomato packs last year, will be extended to all major 1955 packs beginning with asparagus. The Association's Safety Committee will be glad to receive any recommendations that canners might care to make relative to improvement of the program, as so successfully conducted in 1954.

PURDUE WASTE CONFERENCE

The Tenth Annual Purdue Industrial Waste Conference will be held in Purdue Memorial Union May 9, 10 and 11, 1955. There will be approximately 50 papers presented on subjects dealing on industrial wastes and their treatment. Hotel reservations can be made at the Purdue Union Club, Fowler Hotel, Cedar Crest Hotel, and Morris Bryant Hotel in Lafayette. Registration blanks are available from Don E. Bloodgood, Professor of Sanitary Engineering, Purdue University, Lafayette, Indiana.

O-I ADVANCES JONES

E. M. Jones, with the Owens-Illinois Glass Company for the past 21 years, and for the past two years Sales Manager of the Glass Container Division, Central Division, with headquarters in Cincinnati, and prior to that Branch Manager in Cincinnati for 7 years, has been appointed Manager of Processed Food Sales for the company's Glass Container Division, succeeding Robert F. Graham, who has been promoted to Manager of the New York Branch. Mr. Jones will devote much of his time to creative selling in the development of new business and will be responsible for the sale of lines such as tomato products and baby foods.

RUGG JOINS MAX AMS

Clifford M. Rugg, until recently associated with the Callahan Can Machine Company of Brooklyn, New York, as Assistant Sales Manager, has been appointed to the sales organization of the Max Ams Machine Company, Bridgeport, Connecticut manufacturers of Automatic Can Making Machinery.

FRENCH STAMP TO HONOR APPERT

The French Post Office Department will issue a special stamp this year in commemoration of Nicholas Appert's achievement of successfully preserving foods in sealed containers, and for which he has become known as the "Father of Canning". In addition to the stamp, Appert will also be honored by the Philatelic Society of Chalons-sur-Marne, the scientist's birthplace, which is preparing post cards bearing the bust of the great French inventor.

UBC ELECTS

UBC Distributors, Inc. of Chicago, upon the retirement as president of W. Wendell Caldwell because of ill health, has elected the following officers: J. E. Oakell, President; R. A. Simon, Vice-President; J. E. Butler, Treasurer; and S. E. Nordlund, Secretary.

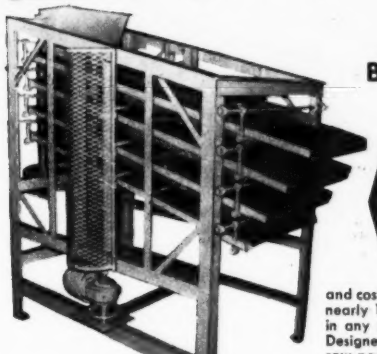
CONTINENTAL CASH CONTEST FOR "FOODS BY CASE" SELLING IDEAS

A $2500 cash prize contest for grocers' ideas on moving canned foods by the case is planned by Continental Can Company, to start on March 25! The grand prize is $1,000, second prize is $500. In addition, there are ten prizes of $50 each and twenty prizes of $25 each, making a total of 32 chances to win!

Made to order for busy operators, the contest runs only 30 days and is based on the subject, "How I would promote canned foods by the case". Ideas might be based on a promotion a store has already done or is planning, tie-ins with holidays or special events, multiple pricing, mass displays or unusual advertising.

Judges of the contest will be the editors of "Chain Store Age", "Food Topics", "Progressive Grocer", "Super Market Merchandising" and "Supermarket News". Grocers may send in as many entries as they wish, with each entry limited to 200 words in length. Mail ideas to Merchandiser Contest, Box No. 1127, Grand Central Station, New York 17, New York. All entries must be postmarked not later than April 25, 1955.

EQUIPMENT BACKED BY EXPERIENCE AND KNOW-HOW



BERLIN CHAPMAN
SHAKER GRADER

With two years experience behind it, successfully operating on peas, lima beans, sliced beets and other vegetables, cherries and fruits, this compact unit with high capacity, accuracy of grade, minimum space and cost has proven its high efficiency . . nearly 100 per cent accurate. Available in any number of decks from three to six. Designed to handle 8,000 to 10,000 lbs. raw peas per hour or comparable capacity.

BERLIN CHAPMAN
RETORT CRATES

Welded, steel construction, ten gauge perforated material in bottom and twelve gauge body material, BERLIN CHAPMAN perforated crates give you maximum protection for your filled cans . . . a welded bottom assures a perfectly even stacking platform . . . even and proper steam circulation are assured by numerous holes.

FOOD PROCESSING MACHINERY SINCE 1909

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CORN CANNING EQUIPMENT

For Canning Fanciest Cremogenized and Whole Kernel Corns:

HUSKERS, CUTTERS, SILKERS, FLOTATION WASHERS, ROD-SHAKERS, TRIMMERS, CAN SHAKERS, CREMAKERS, MACERATORS, SANITARY MIXERS, SUCCULOMETERS, CONSISTOMETERS, AND ACCESSORY EQUIPMENT.

THE UNITED COMPANY Tuc
WESTMINSTER MD

NATIONAL FROZEN FOOD CONVENTION PROGRAM

Joint Meeting — Packers—NAFFP and Wholesalers—NWFFDA

Conrad Hilton Hotel, Chicago, Illinois, March 12-17, 1955

(All Events At the Conrad Hilton Unless Otherwise Noted)

SATURDAY, MARCH 12

All Day—Registration and Committee Meetings

SUNDAY, MARCH 13

1:00 P.M.—Membership Luncheon, N.W.F.F.D.A.—Upper Tower

Presiding: Joseph Gaudio, President

A Message from Britain's Frozen Food Industry, Theodore A. Raymond, Woking, Surrey, England

Discussion of Industry Developments by Harry K. Schuffler, Executive Director; Ellis Arnall, General Counsel

Business Session (For Distributor Members Only)

2:00 P.M. - 6:00 P.M.—Exposition Open—Exhibition Hall

6:00 P.M. - 7:30 P.M.—Convention Reception & Cocktail Party

MONDAY, MARCH 14

9:00 A.M.—SYMPOSIUM ON AMERICA'S FROZEN FOOD I.Q., Sponsored by N.A.F.F.P.—Waldorf Room

(A panel to put the spotlight on a major industry problem: Has the full story of frozen foods really been driven home to all potential customers?)

Moderator: John Mock, Evanston, Illinois

"What Is Mrs. Homemaker's Frozen Food I.Q.?"—Dorothy Roberts, Editor, Food Service Bulletin, *McCall's Magazine*

"How Much Do Institutional Users Know About Frozen Foods?"—Hugh W. Daum, Owner, Hugh W. Daum Company

"What Is the Retailer's Frozen Food I.Q.?"—A. H. Rosenfeld, Editor and General Manager, *Frozen Food Age*

9:00 A.M.—CONCURRENT REGIONAL DISCUSSION MEETINGS, Sponsored by N.W.F.F.D.A.

Central Region—"The Merchandising Challenge of 1955"—Williford Ballroom

Eastern Region—"Analysis of Trends in Frozen Food Distribution"—South Ballroom

Southern Region—"Cooperative Ideas and Areas in Promoting Promotions"—Room 2

Southwestern Region — "Fair Trade Practice Rules"—Room 4

Western Region—"West Coast Problems"—West Ballroom

11:00 A.M.—"HOW TO BE SURE OF PROFITS"—Sponsored by N.W.F.F.D.A.—South Ballroom

Chairman: Sam Vogel, Vice President, N.W.F.-F.D.A.

"Improving Market Information"—A Test of Measuring Movement Into Store Cabinets"—Dehard B. Johnson, U. S. Department of Ag

"Making Management's Job Easier"—Andrew Scarborough, S. D. Leidesdorf & Co.

12:30 P.M.—"NO HOST" LUNCHEON FOR WAREHOUSEMEN—Sponsored by N.A.R.W.

Presiding: M. W. Young, President, N.A.R.W.

Addresses by: John M. Fox, President, Minute Maid Corporation

Samuel M. Vogel, Vogel's, Inc.

2:00 P.M. - 7:00 P.M.—Exposition Open—Exhibition Hall

2:30 P.M.—Forum: "TODAY'S RESEARCH ON FROZEN FOODS—Sponsored by N.A.F.F.P.—Private Dining Room 3

Moderator: E. L. Morin, Head, Research & Quality Control Department, Seabrook Farms Company

Helen L. Hanson, Food Technologist, U.S.D.A.

L. G. MacDowell, Research Director, Florida Citrus Commission

Donald K. Tressler, Scientific Director, Quartermaster Food and Container Institute for the Armed Forces

J. G. Woodroof, Chairman, Food Processing Department, Georgia Experiment Station

C. H. Brokaw, Chief of Quality Control, Minute Maid Corporation

K. G. Dykstra, Manager of Birds Eye Laboratories

W. J. Hart, Jr., Chief Technologist, John H. Dulany & Son, Inc.

T. W. Utterback, Manager, Research & Quality Control Division, Pictsweet Foods, Inc.

4:30 P.M.—WHAT'S NEW IN FROZEN FOOD MOVIES—Waldorf Room

"Fresh Frosted Meats for the Food Service Industry"—Armour & Co.

"High Tide in Newfoundland"—Canadian National Film Board & Fishery Products

"What Every Grocer Should Know About Frozen Foods"—*Quick Frozen Foods*

"Time for Shopping"—Marathon Corporation

TUESDAY, MARCH 15

9:00 A.M.—OPERATIONS UNLIMITED—Sponsored by N.W.F.F.D.A.—Waldorf Ballroom

(A symposium to look at present and unlimited future methods and techniques. This discussion is designed to enable you to evaluate and improve your management and operation methods.)

Co-Moderator: Henry Kegley, Teneva Frozen Foods

9:00 A.M.—Introduction: "Internal Eternity" (or "How to Live at Peace with Your Business")

"What Motivates Consumers?"—Don Armstrong, Market Research Manager, McCann Erickson

"Modernizing a Small Distributorship? Practical and Profitable."—Milton Brunk, Frederick Produce Co.

"Streamlining Operations in a Side-Winder Plant"—Al Pfleeger, Frontier Frozen Foods

Co-Moderator: Jim Mixon, Mixon, Inc.—"Squeezing that Last Ounce of Efficiency from Plants and Personnel"

"Specialized or Integrated Distribution? Which and When?"—Sam Regenstrief, Musante, Berman & Steinberg

"Tapping the Home Freezer Market—Means, Methods, Problems & Profits"—Jack Karmen, Maine Frozen Foods (and Maine Food Plan)

"Automation in the Office—All But Thought Control"—C. E. Rodemann, International Business Machines Corp.

"Automation in the Plant—Unbelievable Opportunities Ahead for Cost Reduction"—James Sebastian, President, Rapids Standard Co.

9:00 A.M.—"An Up-To-Date Picture of Uses of Cold Pack Fruits & Berries"—N.A.F.F.P.—South Ballroom

Moderator: John Mock, Evanston, Illinois

(A panel discussion to furnish a detailed pic-

ture of present markets for cold pack fruits and berries.)

"Present Distribution of Cold Pack Fruits & Berries to Bulk Users"—H. Wayne Bitting, Agricultural Economist, U.S.D.A.

"The Preserver Looks at Cold Pack Fruits & Berries" — Arthur W. Woelfle, Secretary-Treasurer, Bedford Products, Inc.

"The Bakers' Reaction to Cold Pack Fruits & Berries"—Earl Johnson, Plant Manager, Wagner Baking Corporation

12:30 P.M.—Luncheon for Prepared Frozen Food Packers and Their Guests—Blackstone Hotel
Sponsored by National Prepared Frozen Food Packers Assn.

2:00 P.M. - 9:00 P.M.—Exposition Open—Exhibition Hall

2:30 P.M.—FORUM ON FROZEN FOOD TRANSPORTATION PROBLEMS—Sponsored by N.A.F.F.P.—West Ballroom
Moderator: A. E. Stevens, Vice President, Minute Maid Corporation
Industry Representatives: T. C. Borden, Traffic Manager, Exchange Lemon Products; D. E. Carroll, Vice President, Western Frozen Foods; B. M. Angell, Vice President, Stokely-Van Camp, Inc.
Rail Carrier Representatives: Otto Kopp, General Freight Traffic Manager, Northern Pacific Railway; John C. Rill, President, Fruit Growers Express
Motor Carrier Representatives: Milton Ratner, Emery Transportation Company; Cyrus B. Weller, President, Frozen Food Express

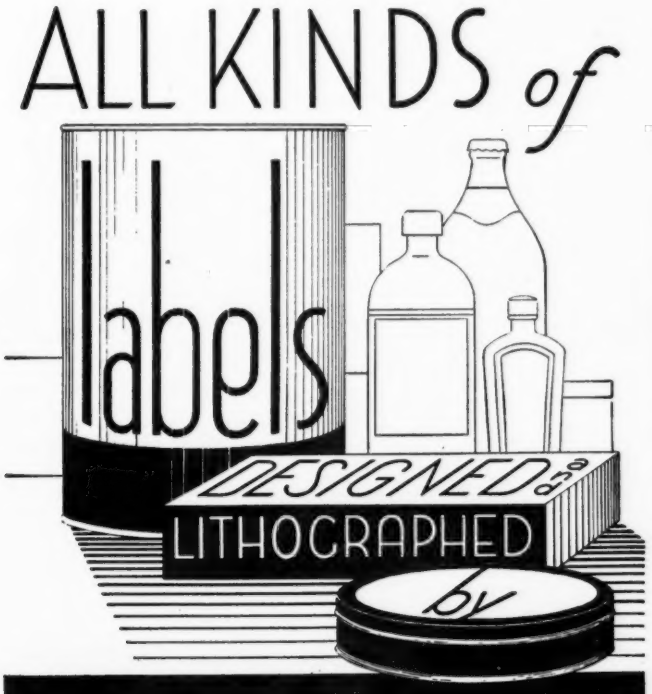
2:30 P.M.—MANUFACTURING QUALITY PREPARED FROZEN FOODS—Sponsored by N.A.F.F.P.
Moderator: John Mock, Evanston, Illinois
"Good Frying Practices for Frozen Fried Foods"—C. G. Robertson, Bakers Research Division, Proctor and Gamble Company
"Quality Breading Practices"—John H. Meletio, President, Meletio Seafood Company
"The Key to Better Pies and Baked Products"—Gerald A. Fitzgerald, Frozen Food Consultant

WEDNESDAY, MARCH 16

9:00 A.M.—KEEPING FROZEN FOOD INDUSTRY MOVING FORWARD—Sponsored by N.A.F.F.P.
Moderator: John Mock, Evanston, Illinois
"Problems Involved in Temperature and State Legislation"—H. J. Humphrey, Research Manager, Birds Eye Division, General Foods Corp.
"The Importance of Good Frozen Food Retailing Practices"—E. W. Williams, Publisher, *Quick Frozen Foods Magazine*
"What Frozen Food Nutritional Information Means to the Industry"—Carl H. Krieger, Director, General Laboratories, Wisconsin Alumni Research Foundation
"The *Full* Dramatic Story of Frozen Foods Is Still To Be Told"—John Willem, Vice President, J. Walter Thompson

9:00 A.M.—THE RESTAURANT—A GOLDEN OPPORTUNITY—Panel Discussion Sponsored by N.W.F.-F.D.A. in cooperation with The National Restaurant Association and *Restaurant Management*—Boulevard Room
Chairman: Leo Nejelski, Executive Vice President, Institutional Food Manufacturers of America

(Continued on page 49)



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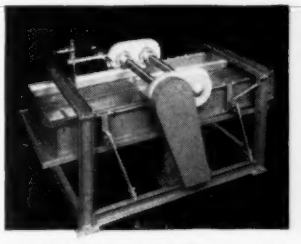

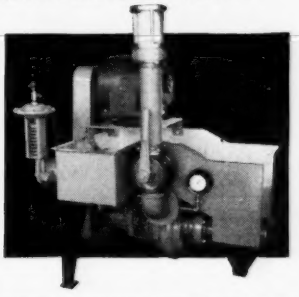

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SCOTT VINER HYDRAULIC ELEVATOR for all foods that can be elevated or conveyed in water . . . hot, cool or refrigerated. Weinman or Fairbanks-Morse pumps in 3", 4", 5" or 6" sizes; standard or variable speed drives. Proven by 15 years of canning and freezing duty.

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MARKET NEWS

February 1st Stock Situation--Corn, Peas, Beans and Limas

Corn canners by February 1, according to NCA reports released this week, had moved 800,000 cases more than the previous season, but it is apparent from the figures in the table below that unless the rate of shipment during the second six months is stepped up considerably over the same period a year ago, the carryover promises to set an all time record.

The detailed table shows of course that the relative surplus is in the Midwest and that is nothing new. Shows that the East is comparatively heavy on white whole kernel, mostly shoe-peg, and that this area is comparatively short on golden cream style. It should be noted that shoe-peg was one of the short items last year in this section.

The Midwest is heavy on both whole kernel and cream style golden, heavier on the whole kernel. Stocks in the Far West are not greatly different than a year ago.

The corn table shows that shipments have fallen off slightly in the East the first six months of this year. The West has shipped exactly the same number of cases and the increase in shipments is all in the Midwest. The figures on shipments the second six months of last season are shown as a guide to what might be expected this year. There are many factors favoring heavier shipment this year —increased sales and promotion effort, an increase in population (2 million), higher quality and a more attractive price. In planning acreage corn canners might bear in mind that with all of those factors prevailing the first six months, only 800,000 cases more were shipped in that period. If that same ratio prevails the second six months, there'll still be a carryover of nearly seven million cases.

Of the 22.9 million cases on hand February 1, 18.9 million cases were fancy, 2.9 million cases extra standard and only 1 million cases standard. 14.7 million cases were 303's, 3.8 million cases 12 oz. vac., 2.4 million cases 8 oz., 1.8 million cases of 10's and a small balance of miscellaneous. No. 10 cream style is especially short in the Midwest, while there is more of that in the East than there is of No. 10 whole kernel.

PEAS—Peas are no problem as will be seen in the table on that commodity. With 4 months remaining in the season, canners only have 11.2 million cases on hand compared with 14.2 million cases last year. Last year during February, March, April and May, canners shipped 10 million cases. At that rate the supply will be exhausted for all practical purposes come next June 1. On February 1, 1955, New York and Maine held only 380,888 cases all sweets. The Mid-Atlantic, 577,026 both sweets and Alaskas, the Midwest 7½ million cases of both varieties and the Far West 2.7 million cases. Of the total, 8.9 million cases were sweets, 2.3 million cases Alaskas.

By quality February 1 stocks totaled: Alaskas, fancy 848,624 cases, extra standard 899,715 cases, standard 586,511 cases; sweets, 6,066,529 fancy, 2,096,570 extra standard and 691,086 standard. There were only 264,603 cases of No. 10 Alaskas all qualities on February 1, and 860,536 cases of No. 10 sweets.

FEBRUARY 1 CANNERS STOCKS—CANNED CORN

(Thousands of Actual Cases)
Source: National Canners Association

	East		Midwest		West		Total	
	1954	1955	1954	1955	1954	1955	1954	1955
White, C.S.	38	23	2,197	2,165	.....	.....	2,235	2,188
White, W.K.	152	519	243	523	.....	.....	395	1,042
Golden, C.S.	1,745	1,313	5,054	5,612	1,575	1,752	8,373	8,677
Golden, W.K.	955	1,109	6,988	8,409	1,387	1,462	9,330	10,980
Total, C.S.	1,783	1,336	7,251	7,777	1,575	1,752	10,608	10,865
Total, W.K.	1,107	1,628	7,231	8,932	1,387	1,462	9,725	12,022
Total All	2,890	2,964	14,482	16,709	2,962	3,214	20,333	22,887
Shipments 8/1 to 2/1	2,695	2,319	13,510	14,677	2,023	2,023	18,229	19,019
Shipments 2/1 to 8/1	2,141	?	11,106	?	1,942	?	15,188	?
Total Carryover, Aug. 1	749	?	3,376	?	1,020	?	5,145	?
Carryover at Last Years Rate of Shipment 2/1 to 8/1	.....	823	.....	5,603	.....	1,272	.....	7,699
8/1 Price W.K. Fcy. Gol. 303s	1.60-1.70	1.35-1.40	1.40-1.50	1.15-1.25	.....	.....	.....	.....

SUPPLY, STOCKS AND SHIPMENTS CANNED PEAS

(Thousands of Actual Cases)

	1953-54	1954-55
Carryover, June 1	3,420	4,243
Pack	31,366	27,245
Total Supply	34,786	31,488
Stocks, Feb. 1	14,203	11,189
Shipments During Jan.	2,848	2,702
Shipments, June 1 to Feb. 1	20,583	20,299

SNAP BEANS — It's no secret that snap beans are in extremely heavy supply. The details of this supply are shown in the table below. It should be noted that for all practical purposes, the surplus is in green beans, in all areas except the South which holds only slightly more than last year. Surplus in the Middle-Atlantic is not as burdensome as in the Far West, Midwest or the Northeast. Also, it should be noted that the surplus of French style and standard cut is comparatively light as compared with last year.

The Midwest holds the bulk of the small surplus in wax beans, while the Northeast, which is the most important producing area of this variety, actually holds less than last year.

SUPPLY, STOCKS AND SHIPMENTS GREEN AND WAX BEANS

(Actual Cases)

	1953-54	1954-55
Carryover, July 1	331,859	2,269,419
Pack	23,896,816	28,773,327
Total Supply	24,228,675	31,042,746
Stocks, Feb. 1	7,799,826	13,576,917
Shipments During Jan.	1,725,546	2,465,336
Shipments, July 1 to Feb. 1	16,428,849	17,465,829

On February 1, 1955, there were 7.9 million cases of No. 303 green beans, 1.5 million cases of 303 wax, 2.3 million cases of No. 10 green beans, and 223,000 cases of No. 10 wax, .9 million cases of 8 oz. green beans and .3 million cases of 8 oz. wax, the balance in miscellaneous sizes.

Shipments of both varieties have totaled approximately a million cases more than last year for the first 7 months. Shipments for the 5 month period, February 1 to July 1, last season, totaled but 5½ million cases. Shipments at that rate this season would leave a carryover of 8 million cases. If shipments during the next 5 months continue at the same rate as the first 7 months of this season, the carryover would total abou 7.3 million cases on July 1.

LIMA BEANS—Unlike the other commodities, lima beans have not moved out to date as well as last year, leaving stocks considerably above last years levels. Greens and fordhooks, as will be seen by the table below, are the varieties in especially heavy supply while green and white are actually below last years level. During the second 6 months of last season, lima bean canners shipped 1.2 million cases. If they reach that level this year, there'll be a carryover of 1.4 million cases.

FEBRUARY 1 STOCKS SNAP BEANS

(Thousands of Actual Cases)

	1954	1955
Green		
Northeast	1,021	2,099
Mid-Atlantic	1,280	1,624
Midwest	865	1,920
West	1,220	3,956
South	1,883	1,970
Total Whole	390	1,305
Total French Style	875	946
Total Fancy Cut	1,839	4,785
Total Ex-Std. Cut	1,535	2,515
Total Std. Cut	1,629	2,018
Total Green	6,269	11,569
Wax		
Northeast	902	860
Mid-Atlantic	130	164
Midwest	416	830
West	80	154
South	4	.....
Total Whole	58	133
Total French Style	4	5
Total Fancy Cut	1,000	1,366
Total Ex-Std. Cut	374	391
Total Std. Cut	96	113
Total Wax	1,531	2,008

SUPPLY, STOCKS AND SHIPMENTS CANNED LIMA BEANS

(Thousands of Actual Cases)

	1953-54	1954-55
Carryover, Aug. 1	227	459
Pack	3,337	3,952
Total Supply	3,604	4,411
Stocks, Feb. 1	1,669	2,583
Shipments, Aug. 1 to Feb. 1	1,936	1,828

'54-'55 LIMA BEAN STOCKS & SHIPMENTS BY AREA

(Thousands of Actual Cases)

	Total Supply 1954 Pack & Carryover	Total Stocks Feb. 1, 1955	Shipments Aug. 1-Feb. 1
Md. and Del.	1,218	785	433
Other East	695	409	286
Midwest & West.	2,498	1,389	1,109
U. S. Total	4,411	2,583	1,828

FEBRUARY 1 LIMA BEAN STOCKS BY VARIETY

(Thousands of Actual Cases)

	1954	1955
MARYLAND AND DELAWARE		
Green	353	616
Green & White	93	162
White	.....	.....
Fordhooks	8	6
Total	455	785
EASTERN STATES		
Green	455	258
Green & White	148	141
White	.....	.....
Fordhooks	10	10
Total	341	409
MIDWESTERN & WESTERN STATES		
Green	647	1,187
Green & White	174	79
White	1	2
Fordhooks	52	121
Total	873	1,389
Total Green	1,183	2,062
Total Green & White	415	382
Total White	1	2
Total Fordhooks	70	137
U. S. Total	1,669	2,583

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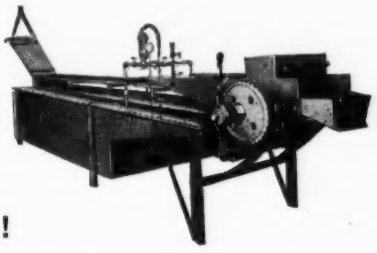
HOT-WATER TOMATO SCALDER —YOUR BEST SCALDER BUY!



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- Saves 80% of steam consumption . . . at the present price of coal, this saving **pays for scalder in a year.**
- Eliminates 1/3 water storage!
- Saves cleaning time . . . easily slushed thoroughly by opening 24" door.
- Less undesirable steam . . . adds to comfort of peelers . . . provides greater efficiency.
- Conveyor readily lifts from hot water, eliminating loss of many cases product when filling or closing machine is down.
- Saves maintenance time—conveyor lifts easily for thorough cleaning and painting.

HOW IT PAYS

- Increases volume of pack . . . one to two more No. 2 cans per hamper.
- Maintains highest possible quality.
- Provides uniform scalding.
- Retains all pectin in tomatoes—richer color, higher quality.
- Contributes to sanitation . . . corners rounded . . . no accumulation of seeds or foreign particles.

WRITE FOR FURTHER DETAILS TO

F. H. LANGSENKAMP CO.

227-235 East South St. INDIANAPOLIS 25, INDIANA

FINE LABELS

ORIGINAL DESIGNS

Gamse

GAMSE LITHOGRAPHING CO., INC.

GAMSE BLDG., BALTIMORE 2, MARYLAND

NEW YORK MARKET

Buyers Liberalizing Inventories Moderately —Tri-State Tomatoes Firm—Moderate Inquiry For Corn — Peas Continue To Strengthen—Beans Routine—Steady Undertone To Citrus—Clean Up Lots Of Fruits Getting Attention—Applesauce Unsettled—Some Shading Of Cherries—Salmon Volume Above Expectations—Sardines Dull—Tuna Buying Light.

By "New York Stater"

New York, N. Y., Mar. 4, 1955

THE SITUATION — Day-to-day replacement buying was the order of the day in canned foods trading here this week. Distributors are getting a good Lenten call for canned fish, and additional replacement buying will be required to top off inventories again when the warmer months arrive. Distributors were also paying a little more attention to canned citrus juices, and California canner offerings of unsold holdings were also coming in for some study.

THE OUTLOOK — Chains and wholesalers are liberalizing inventories moderately, and are showing more vigilance against out-of-stocks as the competitive pace quickens. There is no inclination to go out on a limb, however, and speculative profits from inventories are farthest from the minds of most canned foods buyers, who are endeavoring to gear their purchasing operations to a steady fill-in basis as the marketing year progresses.

TOMATOES—A firm market is in evidence in the tri-states area, and canners increasingly are working off holdings of both shelf sizes and 10s to the point where many will be down to bare floors long before 1955 canning operations start. Standard 303s generally command a minimum of $1.30, which is on a parity with current quotations from California. Standard 10s in the East are firm at $7.50, with California offerings reported at $7.25.

CORN—Moderate inquiry is reported in corn, with most distributors working into current inventories before bringing in replacements. Canners in the Tri-States are holding fancy golden whole kernel at $1.35 and upwards on 303s, which is considerably over the Midwest basis. Standard creamstyle 303s list around $1.00 in the east, with the same figure quoted by Midwest packers.

PEAS—With carryover holdings dwindling steadily, more buyer interest has developed in peas, and the market continues to strengthen. Standard 303s in the Tri-States are generally steady at $1.25 and upwards, with the market in the Midwest holding at $1.30.

BEANS—Routine inquiry is reported, and the market is still somewhat unsettled. From the Tri-States, offerings of standard cut 303s are reported at a range of $1.00 to $1.05, with extra standards ranging $1.15 and upwards and fancy holding about $1.60.

CITRUS—A steady undertone ruled in Florida citrus during the week, and a better inquiry was developing. For promt shipment, canners are holding orange juice all the way from $1.05 to $1.12½ for 2s, with 46-ounce ranging $2.25 and upwards. Grapefruit juice 2s were offered at 87½ to 90 cents, with 46-ounce at $1.85-$1.90, while blended juice was quoted at 97½ cents and upwards on 2s and $2.10 to $2.20 for 46-ounce.

WEST COAST FRUITS — Canner "clean-up lots" are attracting a little attention where distributors can use small blocks to round out assortment. Offerings from the coast this week included Royal Anne cherries at $4.10 for standard 2½s in light syrup, with fancy 303s at $3.00. On unpeeled 'cots, choice 2½s in heavy syrup were offered in a small way at $3.20, with 303s at $2.05. Some standard 303s were quoted down to $1.77½. Fancy Bartlett pears, 2½s, were offering at $3.75 to $3.85, with choice in heavy syrup at $3.40. Choice 10s were quoted at $12.50. Choice fruit cocktail, 2½s in heavy syrup, were quoted at $3.25, with fancy at $3.35. Fruits-for-salad offerings included fancy 2½s at $4.55-$4.65, with fancy 303s in extra heavy syrup at $2.90. These quotations, all f.o.b. canneries, were for fruit for shipment on or before March 7, the date of the warehouse tax in California.

APPLESAUCE—With the market still in unsettled position, buyers are shopping carefully before making replacements. Canners in the east are generally holding fancy 303s at $1.40, but buyers are looking for $1.35 offerings. On 10s, the market is quoted at about $8, with business reported to be passing at 25 to 50 cents under this level in some instances.

CHERRIES — Despite the temporary shot-in-the-arm which the national cherry week promotion provided, the market has still not emerged fully from its doldrums. Midwest canners are quoting 303s all the way from $2.25 to $2.40, with buyers bidding $2.15-$2.20. On 2s, the market is quoted around $2.60-$2.65, with 10s held at $13.75, but reportedly coming in for shading.

SALMON—Retail movement of salmon, with the advent of the Lenten season, has picked up, and volume is running somewhat better than many distributors had looked for. In the light of current high consumer income, the price handicap which some distributors had feared is obviously not as great as had been anticipated. West Coast sellers are offering fancy reds for prompt shipment at $27 to $28 per case for talls and $16.00-$16.50 for halves. Buyers are looking for pinks, but the market is well cleared.

SARDINES—The trade is apparently well covered on immediate needs, and the market was a dull affair this week for both Maine and California canners, with prices holding unchanged.

TUNA—Buying of tuna for coast shipment was rather light this week, and distributors were reported well covered on prompt and nearby requirements. There were no price changes reported.

CHICAGO MARKET

Not Too Much Trading At Convention—Some Corn Items In Better Shape—Tomatoes & Products Advance During Convention —Beans Largely Unchanged—Beets In Far Better Shape Than Last Year—Promotions Help Kraut—Citrus Higher—Some Shading In Some Northwest Fruits—Taking Tax Discounts On California Fruits.

By "Midwest"

Chicago, Ill., Mar. 4, 1955

THE SITUATION — The big city of Chicago is just now getting back on its feet after the recent food conventions and all of their ramifications. A tired group of canners, brokers and others connected with allied groups have left and things are back to a more normal basis.

There didn't appear to be much accomplished in the way of transacting business but a great deal of effort was made to find and buy tomato products of all kinds. Catsup, puree and paste were all on the wanted list and prices were higher at the end of the convention than they were when it started. The trade have learned that these items are short and no fooling. It's also quite obvious that certain grades and sieve sizes of peas are very tight and standards are fast reaching a point where there just won't be any before long. Buyers here are looking for spinach in No. 10 tins and not finding what they need which should start the new pack rolling in fine shape when it's ready. Certain sizes and varities of beets and carrots are difficult to locate and the same thing could be said about lower grades of wax beans. In the fruit line, Cling peaches and apricots are closely sold with very little in the way of offerings reaching here. However, Coast canners are making a strong effort to move all available unshipped stocks out of their warehouses before tax day this month. In this respect, special discounts on cocktail expire March the 7th and shipments will be heavy before that date. All in all, despite a few weak sisters, the entire canned foods market appears to be shaping up very well and canners should come into the new pack in fairly good shape.

CORN—This, of course, has been one of the real soft spots for a long-time and improvement has been slight since the bottom was apparently reached recently. Standard corn is not nearly as plentiful as it was some time ago and there are indications the current price of $1.00 for 303s could move up in the near future. Lower grades in tens are also in much better position than they were, in fact, it's difficult to locate standard grade in anything but small clean up lots. The price on fancy whole kernel in tens has gone up to $8.00 as far as many Wisconsin canners are concerned as supplies are less now than they were this time last year. The surplus appears to be mainly in fancy 303s and prices are still kicking around at $1.15 to $1.20.

TOMATOES — Standard tomatoes are now firm from Midwestern sources at $1.40 for 303s and there are not too many around. A few lots have been offered and sold here out of Florida at less money but the amounts available are very limited. Tomatoes of any grade in No. 2 cans cannot be found in the hands of local canners and extra standards in 303s are listed at $1.50 to $1.60 while tens are firm at $8.75. A few 2½s are still listed at $2.50 but these are just about gone.

TOMATO PRODUCTS—All of the catsup left in the hands of local canners could have been sold here during the convention in about fifteen minutes if canners had been willing sellers. Extra standard grade in the 14 oz. size went from $1.60 to $1.70 and even then canners were reluctant sellers but actually it won't make much difference as catsup will be completely sold up shortly and that includes tens as well as other sizes. Tomato puree and paste, particularly in tens, were in heavy demand but little or nothing was sold simply because just about that much is still left unsold. Fancy juice is firm at $2.35 to $2.40 with twos at $1.20 to $1.25 and it looks like any price changes will be up before they are down.

BEANS—Not much change insofar as beans are concerned with the exception of wax as it's quite obvious standard and extra standard wax beans are getting tight. Green beans of all grades are still offered from all producing areas of the country and prices vary considerably. Standard cuts are offered at $.95 to $1.00 for 303s and $1.15 to $1.20 for extra standards. Fancy three sieve cuts are generally listed at $1.45 for 303s and $7.75 for tens. Sales on standards in 303s have been good as distributors have been featuring these at 10c which the housewife apparently recognizes as a bargain.

BEETS—Buyers here are finding some of the more popular sizes of whole beets have cleaned up and are not readily available. Fancy sliced are also some what on the short side and prices are strong at $6.00 for tens and $1.20 for 303s from Wisconsin points. Salad sliced are bringing $4.50 and $1.00 while fancy diced are listed at $5.00 and $1.00. Beets are in much better shape now than they were this time last year.

KRAUT—Recent promotions on kraut have stimulated the movement and sales here have been on the upgrade. Also some of the weak sellers are either more closely sold up or have stronger ideas as distress selling is not so apparant. Fancy kraut offered by the more important factors is selling readily at $.92½ for 303s, $1.25 for 2½s and $4.20 for tens.

CITRUS — Most citrus canners have now come back into the market on orange juice but at prices which are considerably higher. The market is now generally at $1.12½ for 2s and $2.40 for 46 oz. while blended is listed a $1.02½ and $2.15 with grapefruit juice at $.87½ and $1.85.

NORTHWEST FRUITS—Sales on berries and cherries out of this area have been lagging slightly and there has been evidence of price shading on one or two items. However, pears are holding up very well and canners are having no difficulty getting current prices of $2.20 for choice 303s, $3.50 for 2½s and $12.65

1955 NATIONAL FROZEN FOOD CONVENTION PROGRAM

(Continued from Page 45)

John Ruffley, National Restaurant Association
Don Clark, Restaurant Consultant & Operator
H. Wayne Bitting, Agricultural Economist, U. S. Department of Agriculture
William Millner, General Manager, Langford-Millner Restaurants
Ted C. Waterman, Institutional Sales Manager, Stokely's Honor Brand Frozen Foods

10:45 A.M.—EAVESDROPPING ON THE EXECUTIVE BOARD MEETING—Sponsored by N.W.F.-F.D.A.—Boulevard Room
(A panel of top men in the food industry focus their wide experience and their broad perspectives on weighty factors affecting the whole future of frozen foods while "You Are There.")
F. M. Bundy, President, Gorton-Pew Fisheries
Leo E. Croy, Executive Vice President, Marathon Corporation
John M. Fox, President, Minute Maid
H. F. Krimendahl, President, Stokely-Van Camp,
W. B. Murphy, President, Campbell Soup Co.
Walter S. Shafer, Vice President, Armour & Company
Vernon Stouffer, President, Stouffer Corp.
W. Clarke Swanson, President, C. A. Swanson

12:30 P.M.—Membership Luncheon and Annual Meeting—N.A.F.F.P. (For Members Only)

2:00 P.M. - 6:00 P.M.—Exposition Open—Exhibition Hall

7:00 P.M.—Grand Banquet—Grand Ballroom

THURSDAY, MARCH 17

9:00 A.M. - 6:00 P.M.—Open House Day at Distributors' and Packers' Plants—Chicago Area

Russell's BUILT TO LAST
CASE PACKER
Model R1

Russell's Case Packers are the most simple and rugged machines available. A full case with a single stroke. Improve your labeling with these high speed case packers, labeling interruptions are held to a minimum. Fast Change-over. Only a few seconds are required to change from one size can to another, within range of machine. *Write for Prices and Circular.*

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LAKELAND - Box 462 - FLORIDA

for tens. The market on prune plums has been a little shaky on some sizes and counts although generally prices are holding at $2.10 for choice 2½s and $7.00 for tens.

CALIFORNIA FRUITS—Chicago buyers have ordered on the heavy side on cocktail in their efforts to take advantage of current discounts on this item which expire on the 7th of the month. Many of them are also in the market for Cling peaches but finding the kind and quantity they need is not an easy task. Independent canners are very well sold up and offerings are mostly of the small scattered variety. Apricots would fall into the same classification and many inquiries for fancy cots are going unanswered.

CALIFORNIA MARKET

Sales & Shipping Continue Steady—January Best Single Month For Ripe Olives—Steady Demand For Tomatoes—Spinach Openings Eagerly Awaited—Pears, Elberta Peaches & Cocktail In Relatively Large Supply—Carrots Steady — Sardine Pack Figure — Mackerel Price Set—Pink Salmon Price Hiked.

By "Berkeley"

Berkeley, Calif., Mar. 4, 1955

THE SITUATION — Both sales and shippinug of California canned products continue quite steady, with prices on most lines remaining as in recent weeks. Some changes are under consideration for early March but nothing of a drastic nature is expected on either the up or down side. Opening prices on new pack spinach are expected shortly, with asparagus next in line. Cool weather has delayed the growth of both of these field crops and opening dates are still quite uncertain. Growers are displaying an intention of increasing their acreage of tomatoes this year, but warnings come from crop experts for them to make contracts with processors before planting.

OLIVES—Canned ripe olives are coming in for more and more attention, with January shipments passing the 200,000 case mark, to make it the best single month ever had by the industry. And the season so far is showing gains over the sales and deliveries of any season in the past. Some canners have already had to make withdrawals on colossal and super-colossal and some are reporting that their stocks of mammoth are already quite low. A few canners have made some slight increases in prices and others are considering a similar move. Much of the increased business is credited to the consistent advertising campaign being conducted under the auspices of the Olive Advisory Board. A large part of the pack is still consumed on the West Coast, but sales in other parts of the country are gaining steadily. This season's pack will be close to 2,000,000 cases, according to late estimates.

TOMATOES — There is a steady demand for canned tomatoes with most sales of No. 303 fancy at $1.60, and even more. Little fancy in No. 2 sells for less than $2.00, with No. 2½s moving at $2.50 and No. 10 at $9.75. Some canners are sold up on the latter item. Standard No. 303s move at $1.30, No. 2s at $1.45-$1.50 and No. 2½ at $1.90 to $2.00. Stocks of both tomato paste and tomato puree in No. 10s are quite light and confined to comparatively few holders.

SPINACH—Opening prices on canned spinach are being eagerly awaited, with last year's pack and carryover in light supply. Some advertised brands are being doled out in an effort to make distribution as wide as possible. Opening prices promise to be higher than named last year and more in keeping with spot quotations. Fancy No. 2½ now sell at $1.60, with No. 10 at $4.50-$4.60, with more at the higher figure.

FRUITS — Pears, which are still in ample supply, are moving well, with opening prices generally quite well maintained. Here and there a little shading is reported on a few items of both California and Northwest pack, but in general lists are being well maintained. Elberta peaches are in about the same position, with stocks a little larger than desired. Fruit cocktail is another item that is in rather large supply, the pack having been larger than anticipated.

CARROTS — Carrots are moving out quite well, with no unwieldy stocks in any Pacific Coast area, and with prices steady. Whole carrots are now in good supply, following a period when they were not readily available. The fall pack was stepped up and stocks are now quite well balanced. Coast packs vary quite widely in keeping with the fresh markets. Carrots are shipped to the produce markets when prices are relatively high, and canning takes over when prices drop. This is especially true in California.

SARDINES — The California sardine canning season came to an end with the passing of January and the State Department of Fish and Game now reports a pack of 1,391,931 cases reduced to 1 lb. 48s equivalents. All but 211,402 cases were packed in the southern California district. The pack was much larger than in recent years, but far below those in the heyday of the sardine, where more than 5,000,000 cases were packed in a season. Consumption has dropped off to a marked degree and prices are lower than in the years of scarcity. Most sales of 1 lb. ovals in tomato sauce are made in the range of $7.00 to $7.50, with No. 1 tall in brine quoted generally at $5.00 to $5.50, and 5 oz. tall in tomato sauce, in cases of 100, at $6.25 to $6.50.

MACKEREL — Mackerel of California pack has increased in popularity in recent years and some splendid catches have been made in recent months. For a time, fishermen brought in fish without a set price for the fish, but effective February 11 the price for 1955 catches settled on $45.00 a ton for Pacific mackerel and $42.50 a ton for jack mackerel, the prices being ex-vessel. Prices for the canned product are $7.25-$7.50 for No. 1 tall Pacific mackerel and $6.25-$6.75 for jack mackerel.

SALMON — Pink salmon is in very light supply and prices have moved up to $24.00-$25.00 a case for No. 1 talls and to $15.00-$16.00 for halves Chum salmon of Alaska pack is generally quoted at $16.00 for No. 1 talls. Sockeye salmon makes up a very considerable part of the Puget Sound pack of last season, with most of this confined to halves priced at $17.00.

TOMATO CANNING RESEARCH

Tomato canning research will be carried on this year by the University of California, it has been announced by Dr. H. R. Wellman, vice-president of agricultural sciences. At the annual meeting of the California Farm Bureau Federation held last November a resolution was passed requesting an appropriation of $10,000 for personnel and material for operation of the tomato canning pilot plant at Davis. The budget approved by the University regents for the Food Technology Department is sufficient to carry on the work this year if the tomatoes and cans are donated, as in the past. It is believed there will be little difficulty in getting these donations.

●

Hunt Foods, Inc., Fullerton, Calif., whose fiscal year ended last November 30, reports **net earnings** for the year of $1,601,394, as compared with $848,369 for the previous fiscal year. Earnings were equivalent to $2.38 per share, against $1.12 a share in 1953. Net sales were $66,737,169, the largest in the history of the firm.

Thirty-five engineers and machine designers from the San Francisco plant of the **American Can Company** recently toured the plant and offices of the San Francisco Chronicle. Special attention was paid to the operation of the high-speed presses.

Freedoms Foundation, an organization that since 1949 has conducted a program to spread the story of American liberties, has awarded the **California Packing Corporation**, San Francisco, Calif., an Honor Medal for its employee publication, Del Monte Shield. An individual award also went to Harold Yost, an employee.

CANNED FOOD PRICES

(Spot prices per dozen F.O.B. cannery unless otherwise specified.)

ASPARAGUS
Calif., Fcy. All Gr. No. 2 Colossal ..... Nominal

BEANS, STRINGLESS, GREEN
MARYLAND
Fcy., Fr. Style, 8 oz. 1.00-1.05
No. 303 ..... 1.50-1.60
No. 10 ..... 8.00-8.25
Ex. Std., Cut Gr., 8 oz. ..... .90-.95
No. 303 ..... 1.15-1.25
No. 10 ..... 7.25-7.50
Std., Cut, Gr., No. 303 ..... 1.00-1.05
No. 10 ..... 5.75-6.50
NEW YORK
Wh., Fcy., 2 sv., No. 303 ..... 2.50-2.75
3 sv. 2.25
Cut, Fcy., 3 sv., No. 303 ..... 1.50-1.55
No. 10 ..... 8.25
Fcy., 4 sv., cut, No. 303 ..... 1.47½
No. 10 ..... 7.75
Ex. Std., Cut, No. 303 ..... 1.25-1.30
No. 10 ..... 6.50-7.00
Std., Ung., No. 303 ..... 1.15
Fcy., 4 sv., cut, wax, No. 303 ..... 1.55-1.60
WISCONSIN
Wh., Fcy., 2 sv., No. 303 ..... 2.50-2.55
No. 10 ..... 13.50-13.75
3 sv., No. 303 ..... 2.20-2.25
No. 10 ..... 12.25-12.50
Cut, Fcy., 3 sv., No. 303 ..... 1.45-1.55
No. 10 ..... 7.75-8.25
4 sv., No. 303 ..... 1.35-1.45
No. 10 ..... 7.00-8.00
Ex. Std., 4 sv., No. 303 ..... 1.30
No. 10 ..... 6.25
Ex. Std., 5 sv., No. 303 ..... 1.15-1.25
No. 10 ..... 5.75-6.00
Std. Cut, No. 303 ..... .95-1.00
No. 10 ..... 5.25-5.75
Wax, Cut, Fcy., 3 sv. 1.55-1.60
No. 10 ..... 9.75
4 sv. 1.45-1.50
Ex. Std., 4 sv. 1.35-1.40
5 sv. 1.25-1.30
N.W. Blue Lake
Fcy., 3 sv., cut, No. 303 ..... 1.97½
No. 10 ..... 10.75
Texas, Std. Cut, No. 303 ..... 1.00
No. 10 ..... 5.50

BEANS, LIMA
MIDWEST
Fcy. Tiny Gr., No. 303 ..... 2.00-2.30
Sm. Gr., No. 303 ..... 1.80-1.92½
No. 10 ..... 12.00
Fcy. Gr. & Wh., No. 303 ..... 1.60
No. 10 ..... 9.50
TRI-STATES
Fcy., Tiny Gr., No. 303 ..... 2.40-2.45
Small 1.95
Medium 1.75
Ex. Std. Gr. & Wh., No. 303 ..... 1.35

BEETS
Md., Fcy. cut, Diced 303s 1.00-1.05
Fcy., Sliced No. 303 ..... 1.15-1.20
WISCONSIN
Fcy., Sl., No. 8 oz. ..... .75-.80
No. 303 ..... 1.17½-1.20
No. 10 ..... 6.00
Diced, No. 303 ..... 1.00
No. 10 ..... 4.75-5.00
Cut, No. 303 ..... .95-1.00
No. 10 ..... 5.00
N. Y. Fcy., Cut & Diced 303s 1.05-1.10
Sliced 303s 1.25
Texas, Fcy., Sl., No. 303 ..... 1.05
No. 10 ..... 5.25

CAPRIOTS
Wis., Fancy, Diced, No. 303 ..... .95-1.10
Md., Fcy., Diced, No. 303 ..... 1.00
No. 10 ..... 5.50

CORN—
MARYLAND
W.K. Gold., Fcy., No. 8 oz. ..... .90-.95
No. 303 ..... 1.35-1.40
No. 10 ..... 8.00
Ex. Std., No. 303 ..... 1.10-1.20
No. 10 ..... 7.00
Std., No. 303 ..... 1.00-1.05
No. 10 ..... 6.50
Shoe Peg, Fcy., No. 303 ..... 1.45-1.50
No. 10 ..... 8.00-8.50
C.S. Gold, Fcy., No. 303 ..... 1.30
No. 10 ..... 8.00-8.25
Ex. Std., No. 303 ..... 1.10-1.15
No. 10 ..... 7.00
Std., No. 303 ..... 1.00-1.05
No. 10 ..... 6.50
MIDWEST
Fcy. W. K. Gold No. 303 ..... 1.15-1.22½
12 oz. vac. 1.22½-1.30
No. 10 ..... 7.50-8.00
Ex. Std., No. 303 ..... 1.10-1.15
No. 10 ..... 6.00-7.00
Std., No. 303 ..... 1.00
No. 10 ..... 5.50-6.00
C.S., Gold., Fcy., No. 303 ..... 1.15-1.25
No. 10 ..... 7.50-8.25
Ex. Std., No. 303 ..... 1.05-1.15
No. 10 ..... 7.00-7.75
Std., No. 303 ..... 1.00-1.05
No. 10 ..... 6.50
Co. Gent. W.K., Fcy., 8 oz. ..... .90-.95
No. 303 ..... 1.32½
No. 10 ..... 7.50-7.75
C.S. Fcy., 8 oz. ..... .90-.95
No. 303 ..... 1.25-1.42½
No. 10 ..... 8.00-8.75

PEAS
MARYLAND ALASKAS
Fcy., 2 sv., No. 303 ..... 1.80
No. 303, Ex. Std., 2 sv. 1.50-1.55
3 sv. 1.40
No. 10 ..... 7.50
4 sv. 1.30
Std., 4 sv. 1.25
No. 10 ..... 7.25
MARYLAND SWEETS
Fcy., No. 10, 3 sv. 9.50
4 sv. 8.75
5 sv., & Ungr. 8.50-8.75
Ex. Std., Ungr., 8 oz. ..... .85-.90
No. 303 ..... 1.30-1.35
Std., Ungr., No. 303 ..... 1.25
No. 10 ..... 7.00
MIDWEST ALASKAS
Fcy., 1 sv., 8 oz. 1.60-1.75
No. 303 ..... 2.40-2.50
Fcy., 3 sv., 8 oz. 1.05-1.10
No 303 ..... 1.60-1.65
No. 10 ..... 9.00-9.50
Ex. Std., 2 sv., 8 oz. 1.00-1.12½
No. 303 ..... 1.60-1.75
Ex. Std., 3 sv., 8 oz. ..... .90-.92½
No. 303 ..... 1.35-1.45
No. 10 ..... 8.00-8.25
Std., 3 sv., No. 303 ..... 1.25-1.30
No. 10 ..... 7.00-7.25
Std., 4 sv., No. 303 ..... 1.20-1.25
No. 10 (nom.) 6.50-6.75
MIDWEST SWEETS
Fcy., 3 sv., 8 oz. 1.07½-1.10
No. 303 ..... 1.60-1.65
No. 10 ..... 8.75-9.50
Fcy., 4 sv., No. 303 ..... 1.35-1.50
No. 10 ..... 8.00-8.25
Fcy., Ung., No. 303 ..... 1.55-1.60
No. 10 ..... 7.75-8.50
Ex. Std., 2 sv., No. 303 ..... 1.60-1.65
Ex. Std., 4 sv., Ung., 8 oz. ..... .90
No. 303 ..... 1.30-1.35
No. 10 ..... 7.25-7.50
Std., Ungr., No. 303 ..... 1.20-1.25
No. 10 ..... 7.00

POTATOES, SWEET
Md., Fcy., Sy. Pack,
No. 2½ 2.20-2.30
No. 3 Squat 1.90-2.10

PUMPKIN
Midwest, Fcy., No. 303.. (nom.) 1.00
No. 2½ ..... (nom.) 1.40
No. 10 ..... (nom.) 5.15

SAUERKRAUT
Midwest, Fcy., No. 303 ..... .92½-.95
No. 2 ..... 1.00-1.07½
No. 2½ 1.20-1.30
No. 10 ..... 4.20-4.40
N.Y., Fcy., 303's ..... .90-.95
2½'s 1.15-1.30
No. 10 ..... 3.90-4.25
Texas, No. 303 ..... 1.05
No. 10 ..... 5.15

SPINACH
Tri-State, Fcy., No. 2½ 1.65
Ozark, Fcy., No. 2½ 1.60
Calif., Fcy., No. 2½ 1.60
No. 10 ..... 4.50-4.60

TOMATOES
Md., Std., No. 1 ..... .95-1.00
No. 303 ..... 1.30
No. 2½ 2.20-2.25
No. 10 ..... 7.50-8.00
Ex. Std., No. 303 ..... 1.45-1.50
No. 10 ..... 8.00-8.25
NEW YORK, Fcy., Wh.,
No. 2 ..... 2.50
Ex. Std., No. 2 ..... 1.75-1.80
No. 10 ..... 8.50-8.75
INDIANA, Fcy., No. 2 ..... 2.15
Ex. Std., No. 303 ..... 1.50-1.60
No. 2½ 2.50
No. 10 ..... 8.75
Std., No. 1 ..... 1.05-1.10
No. 303 ..... 1.40
No. 2½ 2.25-2.30
No. 10 ..... Nom.
Calif., Fcy., S.P., No. 303 ..... 1.60-1.65
No. 2 ..... 2.00
No. 2½ 2.45-2.50
No. 10 ..... 9.50-9.75
Ex. Std., No. 303 ..... 1.40-1.45
No. 2 ..... 1.65
No. 2½ 2.10-2.15
No. 10 ..... 7.50-7.60
Std., No. 303 ..... 1.27½-1.35
No. 2½ 1.90-2.00
No. 10 ..... 7.25
Texas, Std., No. 1 ..... .90
No. 303 ..... 1.25
Fla., Std., No. 303 ..... 1.20-1.25
No. 10 ..... 6.75-7.00

TOMATO CATSUP
Calif., Fcy., 14 oz. 1.70-1.75
No. 10 ..... —
Ind., Fcy., 14 oz. 1.85
No. 10 ..... 12.00
Ex. Std., 14 oz. (nom.) 1.70
No. 10 (nom.) 11.00

TOMATO PASTE (Per Case)
Calif., Fcy., 6 oz. 7.50
No. 10 (per doz.) 11.75
Md., Fcy., 100/6 oz. 6.00

TOMATO PUREE
Calif., Fcy., 1.045, No. 2 ..... 1.65
No. 2½ 1.95
No. 10 ..... 6.50
Ind., Fcy., 1.045, No. 1 ..... 1.00
No. 10 ..... 6.50-6.75
Md., Fcy., 1.06, No. 10 ..... 7.00
1.045 No. 1 ..... .90-.95
No. 10 ..... 6.75

FRUITS

APPLE SAUCE
East, Fcy., No. 303 ..... 1.40
No. 10 ..... 7.75-8.00
Calif. (gravensteins)
No. 303, Fcy 1.50-1.55
No. 10 ..... 9.00
N.Y. Apples, fcy., sl., No. 10 ..... 10.25

APRICOTS
Halves, Fcy., 8 oz. 1.35
No. 303 ..... 2.10-2.15
No. 2½ 3.50-3.60
No. 10 ..... 12.00
Choice, 8 oz. 1.20-1.25
No. 303 ..... 2.00-2.10
No. 2½ 3.10-3.20
No. 10 ..... 11.00
Std., No. 2½ 2.75-2.80
No. 10 ..... 9.85-10.10

CHERRIES
R.S.P., Water, No. 303 ..... 2.25-2.40
No. 2 ..... 2.60-2.65
No. 10 ..... 13.50-13.75
N.W., Calif., R.A., Fcy., 8 oz. 1.75
No. 303 ..... 3.05
No. 2½ 5.00
No. 10 ..... 17.90
Choice, 8 oz. 1.65
No. 303 ..... 2.90
No. 2½ 4.70
No. 10 ..... 16.60
Std., No. 2½ 4.25
No. 10 ..... 15.10
N. Y. D. Sw., 303 Ch. 2.70
No. 10 Fcy. 16.30

COCKTAIL
Fcy., No. 303 ..... 2.15-2.25
No. 2½ 3.45-3.50
No. 10 ..... 12.80-13.25
Choice, No. 303 ..... 2.10-2.15
No. 2½ 3.35-3.45
No. 10 ..... 12.25-12.50

PEACHES
Calif., Cling, Fcy.,
No. 303 ..... 1.80-1.82½
No. 2½ 2.85-2.90
No. 10 ..... 10.25-10.60
Choice, No. 303 ..... 1.75-1.80
No. 2½ 2.70
No. 10 ..... 9.60-9.85
Std., No. 303 ..... 1.60-1.65
No. 2½ 2.45-2.47½
No. 10 ..... 8.75-9.00
Elberta, Fcy., No. 2½ 3.35
No. 10 ..... 12.00
Choice, No. 2½ 2.90

PEARS
Calif., Fcy., No. 303 ..... 2.35
No. 2½ 3.85-3.90
No. 10 ..... 13.50
Choice, No. 303 ..... 2.20
No. 2½ 3.40-3.50
No. 10 ..... 12.50-12.65
Std., No. 303 ..... 2.00
No. 2½ 3.00-3.15
No. 10 ..... 11.50-11.65
N. W. Bartletts, No. 2½, Fcy. 3.85
Choice 3.50
Standard 3.15
No. 10, Fcy. 13.50
Choice 12.65
Standard 11.55

PINEAPPLE
Hawaiian, Fcy., Sl., No. 2 ..... 2.85
No. 2½ 3.30
No. 10 ..... 12.60
Crushed, No. 2 ..... 2.40
No. 2½ 2.95
No. 10 ..... 10.10-10.45
Choice, Sl., No. 2 ..... 2.40
No. 2½ 2.85
No. 10 ..... 12.00
Std., Half Slices, No. 2 ..... 2.25
No. 2½ 2.70
No. 10 ..... 10.60-10.80

PRUNE PLUMS
N.W., Choice, No. 2½ 2.10
No. 10 ..... 7.00
N. Y., Ch., No. 303 ..... 1.55
No. 2½ 2.25
No. 10 ..... 7.75

JUICES

CITRUS, BLENDED
Fla., No. 2 ..... .97½-1.02½
46 oz. 2.10-2.20
No. 10 ..... 4.35-4.70

GRAPEFRUIT
Fla., No. 2 ..... .87½-.90
46 oz. 1.85-1.95
No. 10 ..... 3.90-4.10
Texas, Fcy., No. 2 ..... 1.00
46 oz. 2.15

ORANGE
Fla., No. 2 ..... 1.05-1.12½
46 oz. 2.25-2.40
No. 10 ..... 4.90-5.00

PINEAPPLE
Hawaiian, Fcy., No. 2 ..... 1.00
46 oz. 2.12½
No. 10 ..... 4.40

TOMATO
Md., Fcy., No. 2 ..... 1.20-1.25
46 oz. 2.45-2.50
N. Y. & Pa., Fcy., No. 2 ..... 1.20
46 oz. 2.50-2.60
Ind., Fcy., No. 2 ..... 1.20-1.25
46 oz. 2.35-2.40
No. 10 ..... 4.50
Calif., Fcy., No. 2 ..... 1.10-1.15
46 oz. 2.35-2.57½
No. 10 ..... 4.60

FISH

SALMON—PER CASE
Alaska, Red, No. 1T 28.00-29.50
½'s 16.00-17.00
P.S. Sockeye, No. 1T 27.00-28.00
½'s 16.50-17.00
Pink, Tall, No. 1 (nom.) 24.00-25.00
½'s ..... (nom.) 15.00-16.00
Chums, Tall, No. 1 ..... 15.50-16.50
½'s 9.00-9.50

SARDINES—PER CASE
Maine, ¼ Oil Keyless 7.00
Calif., Ovals 48/1's per case.. 7.00-7.50

TUNA—PER CASE
Fcy., White Meat, ½'s 14.00-16.25
Fcy., Light Meat, ½'s 11.50-13.00
Std., Light Meat 11.00
Grated 8.25

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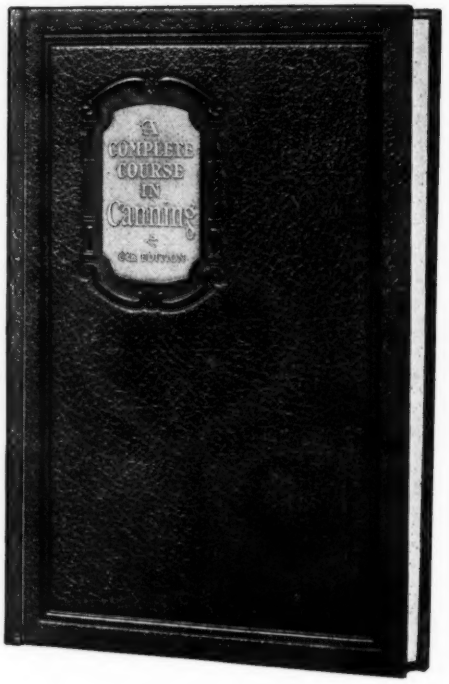

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